Three Essays on Economic Voting and Political Business Cycles

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Preface

This thesis is based on my research work carried out at the Department of Economics, TU Braunschweig Germany. Financial support of this research work is given by Higher Education Commission (HEC), Pakistan and Deutscher Akademischer Austausch Dienst (DAAD), Germany, through a mutual co-operation. This thesis comprises of three research studies undertaken on three important topics of political economics. The first paper (chapter 2) "Bread and the attrition of power: Economic events and German election results" examines the German's voting behavior in the post–war period. The second paper (chapter 3)"Pakistan, Politics and Political Business Cycles" relates to the Pakistan's experience in terms of politics, economics and political business cycles. The third paper (chapter 4) "Pakistan Central Bank Independence and Electoral Politics" examines the Pakistan central bank independence and existence of political monetary cycles.

Irem Batool
Dated: January 10, 2012

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Abstract

This thesis comprises of three research studies undertaken on three important topics of political economics. The first paper (chapter 2) "Bread and the attrition of power: Economic events and German election results" has analyzed the German's voting behavior in response to the economic situations prevailing during the postwar period 1953-2005. This paper has been a modified and extended version of the Hibbs "Bread and Peace Model" and result shows that real per capita disposable income growth is the only economic variable that explains the incumbent aggregate vote share in Germany. The second paper (chapter 3) "Pakistan, Politics and Political Business Cycles" relates to Pakistan's experience in terms of politics, economics and political business cycles. This paper investigates the presence of political business cycles in various macroeconomic indicators during the period 1973–2009. The third paper (chapter 4) "Pakistan Central Bank Independence and Electoral Politics" examines the existence of political monetary cycles in Pakistan, keeping in view the independence of the State Bank of Pakistan. Each of these three chapters is a self-contained unit, provides empirical evidence enriched with modern sophisticated econometric techniques and provides useful policy implications. Although the substance uncovered in the three chapters is different to each other, but they are all based on the common concept of "economic voting" and its implications on economy, politics and other institutions.

Chapter two studies the German's voting behavior in response to economic situations prevailing during the period 1953–2005. Empirical results suggest that German voters are backward-looking and they consider the whole legislative term with only small discounting of past events. They are concerned about national economic well-being, vote according to the per capita real disposable income growth of the economy. As in Hibbs (2008) for the United States, we find that the aggregate votes for incumbent parties in post-war Germany were determined by the weighted-average growth of

real per capita disposable income. Each percentage point of per capita real disposable income growth sustained over the legislative term yielded approximately two percentage points of votes in Germany. No other economic variables add value or significantly perturb the coefficients of our model. However, attrition of power is turned out to be another important variable in the case of Germany that has reduced the vote share in election years 1961, 1994 and 1998.

Chapter three focuses on the opportunistic politicians' behavior in terms of manipulation of the macroeconomic indicators during the election period. Research study has been carried out to study whether in Pakistan the dynamic behavior of unemployment, inflation, budget deficit and real GDP growth is systematically affected by the timing of elections. We have covered the period from 1973–2009 that comprises of seven election terms. Auto Regressive Moving Average (ARMA) Model and Auto Regressive Integrated Moving Average (ARIMA) models with political dummies have been used to investigate the presence of political business cycles in Pakistan. Results show that unemployment tends to be lower in pre-election periods and tends to increase immediately after elections, perhaps as a result of politically motivated employment schemes. Inflation tends to be lower in pre-election periods, perhaps as a result of pre-electoral price regulation. Similarly we find an increase in the governmental budget deficit financed by heavy government borrowings from the central bank and banking sector during the election year. However, real GDP growth and real governmental investment growth declines during pre and post election years, may be as a result of inefficient resource allocation.

Chapter four attempts to examine the Pakistan's central bank independence and the existence of political monetary cycles (PMC) during the period 1985–2010. Existence of such cycles demonstrate the opportunistic political behavior as well as the non-independence of central bank in its monetary operations. Despite various amendments that have been made to strengthen the autonomy of Pakistan's central bank during the decade 1990s, it has been witnessed that Pakistan's central bank is still among the list of least independent central banks. The same picture has been exhibited by the rising fiscal deficit and deficit financing trend during the period 1985–2010. Considering this status, one may suspect the existence of political monetary cycles in Pakistan. Using quarterly data for the period 1985Q1–2010Q4, we have estimated the central bank monetary policy reac-

tion function. Empirical results allow us to conclude that whenever there is an increase in the real output gap or real GDP growth and inflationary pressures in the economy, the central bank tightens its monetary policy by raising the discount rate. To test the existence of political monetary cycles, we have introduced some political dummies in the estimated baseline models. Pre-election political dummies are found to be negative and significant, accepting the PMC hypothesis that the central bank facilitates the incumbent parties in the run up to election by reducing the interest rate during the underlying study period in Pakistan.

Kurzfassung

Diese Arbeit besteht aus drei Studien zu jeweils einem wichtigen Thema aus dem Bereich der politischen Ökonomie. Das erste Forschungsthema "Brot und Machtverfall: Volkswirtschaftliche Ergebnisse und Deutsche Wahlergebnisse" analysiert das Wahlverhalten der Deutschen als Reaktion auf die eigene wirtschaftliche Situation in den Jahren 1953 bis 2005 und ist in "Public Choice" (2009) VR. 141, S. 151 – 169 veröffentlicht. Diese Studie ist eine modifizierte und erweiterte Version des "Brot- und Friedensmodells" von Hibbs und die Ergebnisse zeigen, dass das Wachstum des real verfügbaren Pro-Kopf-Einkommens die einzige ökonomische Variable ist, die den Stimmenanteil der bis dato regierenden Partei bzw. Koalition erklärt. Die zweite Studie (Kapitel 3) "Pakistan, Politik und politische Konjunkturzyklen" bezieht sich auf die pakistanische Erfahrung in Bezug auf Politik, Wirtschaft und politische Konjunkturzyklen. Es wird die Präsenz von politischen Konjunkturzyklen in Hinsicht auf verschiedene makroökonomische Indikatoren im Zeitraum von 1973 bis 2009 untersucht. Der dritte Beitrag (Kapitel 4) "Pakistan die Unabhängigkeit der Zentralbank und parlamentarische Politik" untersucht die Existenz von politischen monetären Kreisläufen in Pakistan in Hinblick auf die Unabhängigkeit der Zentralbank of Pakistan. Jedes dieser drei Kapitel ist eine in sich geschlossene Einheit, liefert empirische Beweise anhand moderner ökonometrischer Methoden und liefert hilfreiche politische Implikationen.Obwohl die Kapitel unterschiedliche inhaltliche Schwerpunkte setzen, beziehen sich alle auf das Konzept von demokratisher Abstimmungen und deren Auswirkungen auf Wirtschaft, Politik und andere Institutionen.

Kapitel 2 untersucht das deutsche Wahlverhalten in Reaktion auf die wirtschaftlichen Situationen während des Zeitraums 1953 bis 2005. Empirische Ergebnisse weisen darauf hin, dass Wähler in Deutschland eine gesamte Legislaturperiode rückblickend und dabei nur schwach distanzierend bewerten. Sie sind besorgt über ihr eigenes wirtschaftliches Wohlerge-

hen, sodass sie auf Basis des real verfügbaren Pro-Kopf-Einkommens der Volkswirtschaft abstimmen. Genauso wie Hibbs (2008) für die Vereinigten Staaten herausfand, konnte auch für die etablierten Parteien im Nachkriegsdeutschland eine Stimmenabhängigkeit vom durchschnittlichen Wachstum des realen Pro-Kopf-Einkommens bestimmt werden. Jeder Prozentpunkt des Pro-Kopf-Wachstums des verfügbaren Realeinkommens in einer Legislaturperiode, ergab nachhaltig rund zwei Prozentpunkte mehr der Stimmen in Deutschland. Keine andere ökonomische Variable stört oder schwächt die Aussagekraft der Koeffizienten des Modells signifikant. Allerdings stellt der Machtverfall eine weitere wichtige Variable in Deutschland dar, welche sich negativ auf die Stimmvergabe in den Wahljahren 1961, 1994 und 1998 auswirkte.

Kapitel 3 konzentriert sich auf das Verhalten von opportunistischen Politikern in Bezug auf die Manipulation der makro-ökonomischen Indikatoren. Dieser Forschungsbeitrag ist durchgeführt worden um zu untersuchen ob in Pakistan das dynamische Verhalten von Arbeitslosigkeit, Inflation, Haushaltsdefizit und dem realen BIP-Wachstum systematisch durch den Zeitpunkt der Wahlen beeinflusst wird. Wir haben den Zeitraum von 1973 bis 2009 abgedeckt, der sieben Wahlzyklen umfasst. Das Auto Regressive Moving Average (ARMA) Modell und das Auto Regressive Integrated Moving Average (ARIMA) Modell mit politischen Dummys wurde verwendet, um das Vorhandensein von politischen Konjunkturzyklen in Pakistan zu untersuchen. Die Ergebnisse zeigen, dass die Arbeitslosigkeit tendenziell in Wahlkampfzeiten niedriger ist und dazu neigt, sofort nach den Wahlen zu steigen, vielleicht als Folge der politisch motivierten Beschäftigungsprogramme. Die Inflation ist in Wahlkampfzeiten tendenziell niedriger, vielleicht als Folge der im Vorfeld der Wahlen stattfindenden Preisregulierung. Ebenso finnden wir eine Erhöhung des staatlichen Haushaltsdefizits durch eine massive Kreditaufnahme bei der Zentralbank und des Bankensektors im Wahljahr. Doch das reale BIP-Wachstum und das reale staatliche Investitionswachstum sinkt während der Pre- und Post-Wahljahre, was als Ergebnis einer ineffizienten Ressourcenallokation gewertet werden kann.

Kapitel 4 versucht zu begutachten, wie sich die Unabhängigkeit der Zentralbank in Pakistan und die Existenz von politischen monetären Zyklen (PMC) im Zeitraum von 1985 bis 2010 darstellt. Die Existenz solcher Zyklen deutet auf opportunistisches politisches Verhalten sowie die Nicht-Unabhängigkeit der Zentralbank bei ihren geldpolitischen Operationen hin.

Trotz verschiedener Änderungen, die gemacht wurden um die Autonomie der Zentralbank Pakistans in der Dekade der 1990er Jahre zu stärken, ist zu beobachten, dass Pakistans Zentralbank noch auf der Liste der am wenigsten unabhängigen Zentralbanken zu finden ist. Das gleiche Bild ergibt sich durch das steigende Haushaltsdefizit und den Trend der Defizitfinanzierung während der Zeit von 1985 bis 2010. Angesichts dieses Status kann man vermuten, dass politische monetäre Zyklen in Pakistan existieren. Mit vierteljährlichen Daten für den Zeitraum 1. Quartal 1985 bis 4. Quartal 2010, haben wir die geldpolitische Reaktionsfunktion der Zentralbank geschätzt. Empirische Ergebnisse bringen uns zu dem Schluss, dass, wenn es zu einer Erhöhung der realen Output-Lücke, des realen BIP-Wachstums und dem Inflationsdruck in der Volkswirtschaft kommt, die Zentralbank ihre Geldpolitik durch die Erhöhung des Zinssatzes verschärft. Um die Existenz von politischen monetären Zyklen zu testen, haben wir einige politische Dummys in die geschätzten Basis-Modelle eingeführt. Politische Dummys bei Vorwahlen erwiesen sich als negativ und signifikant, was zu der Annahme der PMC Hypothese, dass die Zentralbank in Pakistan die Regierungsparteien im Vorfeld der Wahlen durch Verringerung des Zinssatzes unterstützt, führt.

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Chapter 1

Introduction

> When you think economics, think elections; When you think elections, think economics (Tufte 1978, 65).

This dissertation aims at studying two lines of research prominent in political economics; one relates to economic voting, other relates to electoral politics and political business cycles. The notion "Economics shape politics", is well worn among the politicians, policymakers and scholars. Electorates who consider politicians are responsible and accountable for their economic well-being, will act upon the reward-and-punishment model.

They reward the incumbents by voting them in good times, and punish them by voting against them in bad times. If this exists, then there exists a motivation among the politicians for electoral manipulation of macroeconomics or political business cycles. Since politicians are not the social planners, their main objective is to fulfill their political motives e.g. reelection or remain in office. This opportunistic short-term vision led them to select those set of policies that maximize their short term motives, irrespective of the fact that these opportunistic policies such as electoral cycles are harmful in any case and have serious implications for economies in the long run.

For example the emergence and persistence of large public-sector budget deficits and the resulting monetary expansion to create a short-term economic boom before or during the election timings may create inflationary bias and debt sustainability issues. To control and avoid these opportunistic political pressures, the establishment of independent, transparent, strong and legalized institutional setups are strongly recommended worldwide. In this context, a brief introduction of the historical evolution of the concept of voting behavior, economic voting and its implications on economy and political business cycles is worthwhile.

1.1 Voting Behavior

The research on voting dates back to the 1920s, when social scientists began to become more empirically oriented (Merriam and Gosnell,1924). Some of the earliest works analyzed voting patterns by geographical areas and sociological attributes e.g. regions, states, racial origin, ethnic urbanization and class lines.

Research on voting behavior was revolutionized with the advent of survey research, starting with academic surveys in the 1920s and surveys by commercial polling firms in 1930s. The survey method shifted the focus from the collection of sociological variables to the measurement of atti-

tudes. Statistical analysis of these data yields a powerful prediction of the individual's vote. The national vote can vary considerably from one election to the next, but the socio-graphic variables are too stable to explain such changes as they are long run. Attitudes towards political objects, on the other hand, are short in nature. They can, and do, change between elections enough to account for the large changes that sometimes occur in the vote. Additionally these attitudinal variables yield a much more political understanding of elections than do socio-demographic variables.

Lewis-Beck identify a number of factors that form a causation for the voting behavior. These are as follows: (1) political interest; (2) economic issues; (3) fear of war; (4) religious convictions; (5) cost of education; (6) leadership; (7) social pressures; (8) family concerns; and (9) ethnicity (Lewis-Beck,et al., 2007).

To understand the causal relationship between factors that lead to certain voting behavior, (Converse, 2006) describes it as a funnel. The picture of a funnel is a useful way to think about the causal process (see Figure 1.1). The main axis of funnel is the time dimension, with events following one another over time from the mouth of the funnel to its tip. There are a multitude of potential causes at the mouth, and they narrow down to cause vote turnout and vote direction in a particular election at the tip.

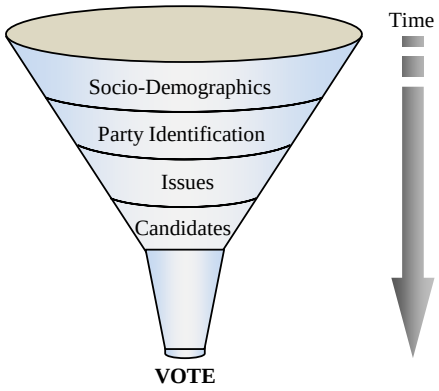


Figure 1.1: Funnel of Causality Model [(Lewis-Beck,et al., 2007), p.23].

The good feature associated with the funnel of causality model is that it provides an appropriate organizing framework that can encompasses all of the factors that includes, from long term sociological, psychological, historical institutional and geographic factors to short-term social psychological, political psychological, economic, and communication factors. However, Lewis-Beck suggest one has to pay attention to more than just time dimension while working on the development of a theory of voting behavior. These

are as follows: First, it is necessary to distinguish between relevant and irrelevant factors. Second, one has to distinguish between factors of which a person is aware of (personal condition) and those of which he or she is not aware of (external conditions). Third, one has to distinguish between political and non-political conditions. It is important to recognize that external non-political events can become personal and political by the time of the election. Nonpolitical events become political through a "Political Translation Process"[(Lewis-Beck,et al., 2007), p.23]. For example, the state of the economy becomes a political factor through a political translation process, when political parties politicize the economic news.

There are a number of approaches developed to understand the underlying mechanism of the voting behavior. One in particular, the rational-choice approach, was developed in 1920s [(Lewis-Beck,et al., 2007), p.27]. The general rational-choice approach explains voting in terms of a person's self interest. Whether or not a person vote depends on that person's cost-benefit analysis: the potential gains from his or her preferred candidate being elected; and the costs they must pay to vote, the time involved in registering and voting, gathering information about the election, and so on. According to the rational-choice approach, a person votes for a party that belongs to the same ideological position as the voter's. The rational-choice approach has over time become closely identified with the idea of economic voting. Indeed, the approach evolved from economics, and voting for one's self interest is seen as rational. This assumption has led to considerable attention to the macroeconomic state of the economy as the election approaches, as well as to the effect of individual economic situations on decisions-for example, whether the unemployed are more likely to vote, or whether those whose economic status is slipping are more likely to vote against the incumbent party.

In addition to rational choice, Lewis-Beck also identified sociological and historical-institutional approaches are described as follows: A sociological approach focuses on the social group correlates of voting, while a psychological approach focuses on the effect of personality factors, such as whether voters with authoritarian tendencies are more likely to favor a particular party. There is also a historical-institutional approach which emphasizes the effects of historical changes and voting laws; and there is political psychology, which applies insights derived from modern cognitive psychology. Our main focus in this dissertation is on economic voting and its implica-

tions on macroeconomics and institutional arrangements setups.

1.1.1 Economic Voting Theory

The notion that economics matters for elections has considerable cachet all over the world. The core model behind the idea that an incumbent won or lost an election because of the economy is the reward–punishment model. The incumbent receives the reward of a vote for good economic times, and punishment for bad economic times by voting for the opposition (Kiewiet, 1983).

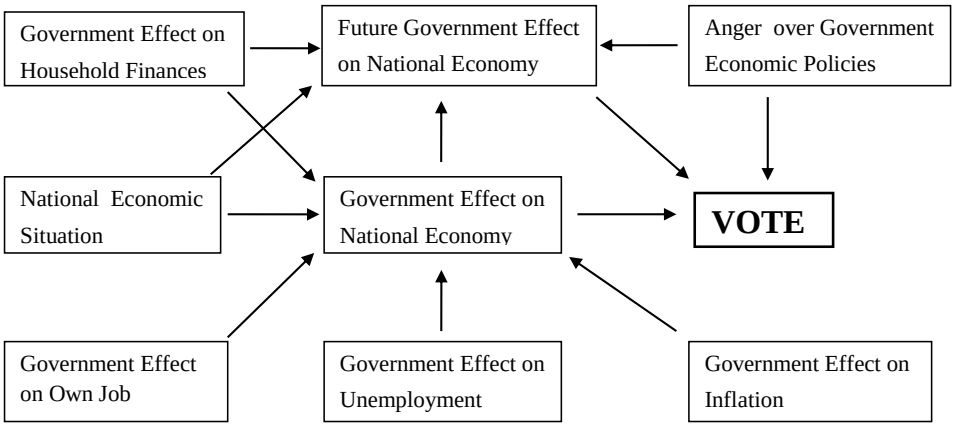


Figure 1.2: A Diagram of Economic Voting [Lewis-Beck (1988), p.93].

Empirical studies of systematic connections of voting and the macroeconomy began to appear in the mid-1920s, however the landmark event in the modern history of research on macroeconomic conditions and elections outcomes is Gerald Kramer's 1971 article on US voting behavior [Kramer (1971)]. Kramer's work was inspired by the broader framework set out by Anthony Downs in "An Economic Theory of Democracy (1957)" – by far the most important work on the political economy of electoral democracies published in the twentieth century. Kramer proposed a clear model for macroeconomic voting, and its empirical predictions were subject to formal econometric tests. Kramer viewed parties as alternative governing teams. Voters were presumed to be rational, self-interested and future-oriented actors for whom acquiring and analyzing massive amounts of potentially relevant information was costly and impractical. Instead he assumed that voters adopt a simple, efficient decision rule: if the incumbent's performance is "satisfactory" vote to retain the incumbent party; if not, vote for the opposition. Kramer's regression experiments showed that the growth of

per capita real personal income exerted robust positive effects on aggregate voting outcomes from 1896 to 1964. In the presence of real income growth rates, inflation and changes in unemployment appeared to have little or no electoral importance – a result that by and large has been sustained over a generation of subsequent empirical research. However Hibbs identified a number of shortcomings identified as follows: (1) he did not supply any evidence that the stochastic properties of macroeconomic variables supported the assumption that the best forecast of future innovation to inflation and real income growth was current growth rates, or that the best forecast of innovation to unemployment was current changes in the rate; (2) he did not attempt to test the supporting assumption that economic voting was forward-looking (prospective), as opposed to being purely retrospective, with past performance yielding electoral rewards and punishments regardless of the implications of past outcomes for the future; (3) furthermore, he did not provide any mechanism to map the behavior of individual, self-interested voters applying simple decision rules to the aggregate vote shares populating his regression experiments [Hibbs (2006), p.565].

The second major event in the emergence of sophisticated empirical analysis of voting and the macroeconomy is Ray Fair's 1978 article on economic voting for US presidents [Fair (1978)]. Like Kramer, Fair adopted the Downsian environment of rational, self-interested voters whose electoral behavior is driven by maximization of expected future utility under the available political alternatives. Fair experimented with various combinations of within-term macroeconomic outcomes and outcomes observed during previous administrations of both the current incumbents and current opposition parties, and he concluded that only within-term macroeconomic conditions affected voting. Fair revised his equation sequentially from one presidential election to the next in a quite openly ad hoc fashion, and from the start offered no explanation of how the various statistically significant, pre-election output growth and inflation variables in his regression could rationally be informative about voter's "highest expected future utility". Perhaps Fair's most enduring contribution to applied macroeconomic voting theory was spelling out the strong assumptions necessary to get from individual utility maximizing voters to a linear aggregate voting equation.

Fair's derivation may be described as follows [Hibbs (2006), p.568]. Let U_{it}^{I} denote voter i's expected future utility under the incumbent party (political bloc) at election period t, and let U_{it}^{O} be the corresponding expected

utility under the opposition party (political bloc). Let V_{it} equal 1.0 if voter i votes for the incumbent, and equal to 0.0 otherwise. Utilities are determined by linear equations of the form:

$$\begin{aligned} U_{it}^{I} &= X_t b + v_{it}^{I} \\ U_{it}^{O} &= \overline{X} b + v_{it}^{O} \\ Cov(X, v^{I,O}) &= 0 \end{aligned} \tag{1.1}$$

where X_t denotes a matrix of variables observed at periods during the incumbent's tenure, $\overline{X}$ is a matrix of constants (the implicit standards against which the incumbent is evaluated), b is the associated vector of parameters, and $v_{it}^{I,O}$ are random events affecting utilities at each election that are unobserved by the investigator. X, $\overline{X}$, and b are common to voters. Individuals voting choices are determined by the party/candidate delivering the highest utility:

$$V_{it} = \begin{cases} 1, & \text{if } U_{it}^{I} \succeq U_{it}^{O} \\ 0, & \text{if } U_{it}^{I} \prec U_{it}^{O}. \end{cases} \tag{1.2}$$

Letting $v_{it} = (v_{it}^{O} - v_{it}^{I})$, the probability P of observing a vote for the incumbent is therefore,

$$\begin{aligned} P(V_{it} = 1) &= P[(X_t - \overline{X})b] \succeq v_{it} \\ &= F_t[(X_t - \overline{X})b \end{aligned} \tag{1.3}$$

where F_t is the cumulative distribution function of v_i at any election. Linearity of an aggregate voting equation is achieved by assuming the deviations $\widetilde{v}_i = (v_i | t - \overline{v}_t)$ to be evenly distributed across voters at each election between some constants, say $\underline{d} < 0$ and $\overline{d} > 0$, with uniform probability density $f_t(\tilde{v}_i) = \frac{1}{\overline{d} - \underline{d}}$ and associated cumulative distribution function $F_t(\tilde{v}_i) = \frac{\tilde{v}_i - \underline{d}}{\overline{d} - \underline{d}}$. The vote probabilities are then:

$$P(V_{it} = 1) = \frac{-\underline{d} + (X_t - \overline{X})b - \overline{v}_t}{(\overline{d} - \underline{d})}. \tag{1.4}$$

Taking average over N voters (with N large enough to approximate an "infinity" of votes) to find $\frac{1}{N}\sum_{i=1}^{N} V_{it} = V_t$, yields the aggregate, linear voting function most commonly used in the empirical analysis:

$$V_t = a + X_t \beta + \mu_t \tag{1.5}$$

where $a = \frac{-\overline{d}-\overline{X}b}{\overline{d}-\underline{d}}$, $\beta = \frac{b}{\overline{d}-\underline{d}}$, $\mu_t = -\frac{\overline{v}_t}{\overline{d}-\underline{d}} \sim$ white noise. Note that if the upper and lower bounds of the distribution of electoral shocks are equal in absolute value, i.e. $\overline{d} = -\underline{d}$, then the effects of $(X_t - \overline{X})$ would yield deviations of V_t from an expected vote share of 1/2.

1.1.2 Two Views of Economic Voting

Economic voting naturally divided into two main views defined by the voters' time horizons: retrospective and the prospective. Retrospective economic voting theory derives from Key's (1968, 61) argument that elections are referenda on the government party's performance in office. Voters reward "good" performance and punish "bad" performance. According to this approach, the elector acts as a appraiser of the past events, the past performance, and the past elections. Voters are assumed to focus on fact, and not on fantasy. That is, they judge what the incumbent party has accomplished, and not what it promises to accomplish. Thus votes are cast on the basis of economic performance, rather than economic policy proposals. This makes the standard for rational voter choice more realistic. For instance with regard to the unemployment or inflation problem, the citizen does not need to decide whether the proper strategy is public spending, job retaining, tax incentives, or whatever. He or she merely needs to make a judgment about whether unemployment has been at an acceptable level. If the answer is "no", chances for pro-incumbent vote go down. Such voting bodes well for the democratic process, because it means that politicians who do not deliver valued results are held accountable at election time.

According to Downs (1957), prospective economic voting is a theory where the expected future relative performance of contestants for office is all that matters for voters. Prospective valuation is akin to the pricing of financial assets in efficient markets: the parties' stock of votes at elections (current asset values) is determined completely by the rationally formed expectations of future benefits, calibrated in units of voter utility. Hence electoral choice is a political investment in the future to which a party's (candidate's political bloc's) past performance has no relevance. As Downs expressed it: "Each citizen votes for the party he believes will provide him with higher utility than any other party during the coming electoral period"[Downs (1957), 38].

1.1.3 Economic Voting: Empirical Implementation

A fairly general model encompassing both prospective and retrospective voting motivations is defined in [Hibbs (2006), p.571] as follows:

$$V_t = a + E_t\left(\sum_{k=1}^{K}\sum_{j=1}^{T}\phi_{kj}X_{k,t+j}\right) + \sum_{k=1}^{K}\sum_{j=0}^{T-1}\mu_{kj}X_{k,t-j} + u_t \tag{1.6}$$

where E_t denotes expectations conditioned on voters' time t information set[1]. $\phi_k = 0$ yields pure retrospective voting; $\mu_k = 0$ implies that voting is purely prospective. For Equation (1.6) to be operational we need to constrain the lag and lead parameters. The natural assumption for the prospective component is to impose a present discounted value with a constant rate of time preference. The general model is

$$V_t = a + E_t\left(\sum_{k=1}^{K}\sum_{j=1}^{T}\phi_k\delta^j X_{k,t+j}\right) + \sum_{k=1}^{K}\sum_{j=0}^{T-1}\mu_k\lambda^j X_{k,t-j} + u_t \tag{1.7}$$

where $\lambda, \delta \in [0,1]$ are one period discount factors, and $k = 1, 2, 3...K$.

The prospective voting model can be derived by assuming $\mu_k = 0$, in Equation (1.7) as:

$$V_t = a + E_t\left(\sum_{k=1}^{K}\sum_{j=1}^{T}\phi_k\delta^j X_{k,t+j}\right) + u_t \tag{1.8}$$

Empirical analysis of forward voting requires specification of how expectations are formed. There are two ways: univariate time series model (Random walk with drift; ARMA and ARIMA models) and the unconstrained multivariate auto-regression models (VAR). Either way, using the pre-election histories to forecast post-election realization of relevant macroeconomic variables yields prospective voting equations that are observationally equivalent to retrospective equations. This theoretical deficiency was overcome by so-called "rational retrospective" models [Hibbs (2006), p.574]. Rational retrospective voting set-ups originate with "signaling"models devised by Rogoff and Sibert (1988) and Rogoff (1990). They motivate the

[1]The lag-lead sequences in Equation (1.6) are based on the timing convention that elections yielding $V_t, V_{t+1}, \ldots V_{t+T}$, occur after the realization of outcomes $X_{k,t}, X_{k,t+1}, \ldots X_{k,t+T}$

fiscally driven political business cycles when incumbents face a forward-looking electorate endowed with rational expectations, as opposed to the backward-looking "myopic" electorate relying upon adaptive expectations that was assumed in Nordhaus (1975). The central idea is that economic voting is driven by the competence of the incumbent in producing favorable macroeconomic performance beyond what would be anticipated from the economy's development in a policy-neutral environment. The competence of elected authorities in managing the economy is persistent, and consequently voters are able to infer useful information about unobserved post-election macroeconomics performance by observed pre-election performance. The mechanics of the rational decision-making process depends upon assumptions about the electorate's information set and the persistence of competence of the incumbents.

Rational retrospective, persistent competency models are quite ingenious but such models have received no support from the data. Alesina, Londregan and Rosenthal (1993) and Alesina and Rosenthal (1995) test empirically the rational retrospective approach on US data and found that US voting outcomes responded to observed output growth rates, rather than growth rate innovations owing to persistent competence carrying over to the future. In view of these findings, the rational retrospective model was rejected empirically in favor of conventional retrospective voting models.

Assuming $\phi_k = 0$, and $k = 1, 2, ...K$ in Equation (1.7) gives a constrained model of pure retrospective voting suited to empirical testing such [Hibbs (2006), p.575]:

$$V_t = a + \sum_{k=1}^{K} \sum_{j=0}^{T-1} \mu_k \lambda^j X_{k,t-j} + u_t \tag{1.9}$$

The basic functional form of Equation (1.9) first proposed by Stigler (1973) in his prescient critique of Kramer (1971). Stigler worked mainly with a single macroeconomic variable–changes in per capita income and was the first who suggested changes in permanent income calibrated over a substantial retrospective horizon and would logically have effects on voting. Moreover, Stigler yet again was the first to connect instability of economic voting regression results to variation in the "powers and responsibilities" of the incumbent party. Following Kramer, Stigler focused primarily on aggregate congressional vote shares going to party holding the White House and his results did not yield much evidence of stable macroeconomic voting

from the turn of the twentieth century up to the mid-1960s.

However, about a decade afterwards Hibbs (1982) showed that the basic retrospective set-up of Equation (1.9), specified with growth rates of per capita real disposable personal incomes over the fifteen post-inauguration quarters of a presidential term as the only regressors, explained postwar aggregates presidential voting outcomes remarkably well. The biggest deviations from fitted vote shares were recorded at the war election of 1952 (Korea) and 1968 (Vietnam). A subsequent version of the basic set-up Hibbs (2000) "Bread and Peace Model", took direct account of the electoral consequences of US involvement in undeclared wars by proposing the following simple retrospective equation, which was fit to data on aggregate presidential voting over 1952–96.

$$V_t = \alpha + \beta_1 \sum_{j=0}^{14} \lambda_1^j \Delta lnR_{t-j} + \beta_2 \sum_{j=0}^{14} \lambda_2^j KIA_{t-j} NQ_t + u_t \tag{1.10}$$

- Where V is the incumbent party's percentage share of the two-party presidential vote,
- R is quarterly per capita disposable personal income deflated by the Consumer Price Index, ΔlnR_t denotes $log(R_t/R_{t-1}).400$, i.e. the annualized quarter-on-quarter percentage rate of growth of R,
- KIA denotes the number of Americans killed in action per quarter in the Korean and Vietnamese civil wars, and NQ is a binary nullification term equal to "0.0" for Q quarters following the election of a new president, and "1.0" otherwise. NQ defines the "grace period" for new presidents "inheriting" US interventions in Korea and Vietnam, that is, the number of quarters into each president's administration over which KIA exerted no effect at the subsequent presidential election.

Hibbs (2000) found out that real income growth accounted for around 90 percent of the variance of presidential voting outcomes was the result of "non-war" elections, while incumbents vote share was reduced by around 11 percentage points due to war in Korea and Vietnam in 1952 and 1968. This was almost certainly the reason for the Democratic Party to loose the elections. No Postwar event–economic or political–affected US presidential voting by anything close to this magnitude (Weingast and Wittman, 2008).

1.1.4 German Elections, Voting Behavior and Economic Outcomes

In chapter two, we have studied the German economy and its experience in terms of economic voting and elections outcomes during the post war period. In the voting behavior models, we have selected the Hibbs "Bread and Peace Model" and analyzed the German economy during the postwar period 1953-2005. Our research has focused on finding the answers to these questions:

1. Are voters backward-or forward-looking?
2. If voters are backward-looking, how far do they look back and how much do they discount past events?
3. Do voters vote according to their pocketbooks or according to the national economic situation?
4. How does the political system (accountability) affect the importance of economic variables?

We find support for the hypothesis that voters are backward-looking and they consider the whole legislative term with only small discounting of past events. They vote according to the national economic situation i.e. per capita real disposable income growth of the economy. As in Hibbs (2008) for the United States we find that the aggregate votes for incumbent parties in post-war Germany were determined by the weighted-average growth of real per capita disposable income of the economy. Each percentage point of per capita real disposable income growth sustained over the legislative term yielded approximately two percentage points of votes in Germany. Even though, the United States and Germany have different political systems. The only difference we can identify is that the growth effect on vote shares in Germany is only half the effect in United States. No other economic variables add value or significantly perturb the coefficients of our model. However, attrition of power is turned out to be an additional variable explaining German election results that has reduced the vote share in election years 1961, 1994 and 1998, when the chancellor sought re-election for the third or more times.

1.2 Economic Voting and Political Economic Cycles

The second part of my dissertation deals with the extension of economic voting to political economic cycles. When economic policy-makers are directly elected (or directly appointed by the elected officials), how do electoral incentives structure economic policy-making? Suppose voters prefer candidates expected to deliver greater economic well-being. Voters may evaluate candidates on recent experience, perhaps on aggregate experience. As a result, incumbents seeking re-election have powerful incentives to improve voter's economic fortunes, or to signal or feign such ability. If voters weigh recent pasts more heavily than distant periods, the incentives to manipulate economic policy to improve the likelihood of re-election sharpen as election approach. Such electioneering may result in cycles of economic expansion and contraction that follow electoral cycles.

The literature on political and economic cycles developed in two clearly distinct phases. The first phase flourished in the mid 1970s, uses the traditional macroeconomic models, in which taking advantage of an exploitable Phillips curve, governments can systematically and predictably influence macroeconomic outcomes. The first strand of this literature emphasizes policymakers' "opportunistic" motivation [Nordhaus (1975); Lindbeck (1976)]. Politicians have no policy preferences of their own, so they choose the policies that maximize their chances of electoral victory. The second strand of the literature emphasizes, instead, policy makers partisan motivation [Hibbs (1977)]. Specifically according to this view, left-wing parties are relatively more concerned with unemployment than with inflation, and right-wing parties have opposite concerns. Moreover, parties stick to their electoral platform when in office.

The second phase of the literature evolved in the mid 1980s as a branch of the game-theoretic approach to macroeconomic policy, an approach pioneered by Kydland and Prescott (1977) and Barro and Gordon (1983). These models of political cycles incorporate rational expectations and emphasize how a rational public limits the extent to which policymakers can influence the economic cycle. Cukierman and Meltzer (1986), Rogoff and Sibert (1988), Rogoff (1990) and Persson and Tabellini (1990) developed opportunistic models with rational expectations. Alesina (1987) suggests a partisan model with rational expectations. These two models differ on two

critical dimensions. First, they may be either "partisan" or "opportunistic". Partisan models focus on differences in policies and outcomes as a result of different government's ideological orientations. On the other hand, opportunistic models claim that every government behaves in the same way i.e. opportunistically to win re-election. Second, they may be "traditional"or "rational". Traditional models theorize that governments exploit their abilities to predict and influence macroeconomic outcomes. On the other hand, rational expectations models emphasize the limits on the policymakers's ability to influence, permanently and predictably, the state of the economy. This rationality constraint affects both, the policy (via voting behavior) and the economy (via the expectations-augmented Phillips curve).

In chapter three we have focused on the identification and existence of the political business cycles in macroeconomic indicators, as well as in monetary and fiscal instruments in the case of Pakistan. Pakistan is a developing country in terms of economic growth as well as in terms of democracy, having more than 180 million population and low literacy rate. These conditions put the politicians at great advantage that they have the chance to use the economic policies in the direction of maximizing their chance of re-election [(Brender and Drazen,2005b)]. The present study investigates the existence of political business cycles in case of Pakistan during the period 1973–2009 and covers seven parliamentarian election terms. Single-country studies of the political business cycle often suffer from a small number of elections. However, the political business cycle is a phenomenon that may or may not occur in a country and a multi country study is not able to answer the question if there have been political business cycles in a special country or not. To proof the existence of a political business cycle in Pakistan, a single- country study is inevitable.

A number of studies have analyzed politically motivated business cycles for both developed and developing countries. Generally, the empirical political business cycle literature can be divided into three main categories. The first category attempts to locate the political business cycles in macroeconomic outcomes. These models have been focused almost exclusively on four macroeconomic indicators: growth, inflation, unemployment and income. In the short run policy results on growth and unemployment may not be obvious enough to voters, therefore governments may try to stimulate those policy variables that have direct monetary benefits to voters like government transfers, tax cuts, subsidies and special employment schemes etc.

The second major category of political business cycle research concentrates on these policy instruments instead of macroeconomic outcomes. The third major category of research focuses on a unique policy instrument: monetary policy (also known as the political monetary cycle). To cover all three categories, this study focuses on economic growth, unemployment, inflation and some fiscal and monetary policy indicators. Despite plenty of empirical evidences found on political business cycles (PBC) for both developed and developing countries, this area of research remains untouched in case of Pakistan. The present study is a valuable addition to fill this gap.

The main objectives of this work are to study the dynamic behavior of the unemployment, inflation, real GDP growth and some monetary and fiscal indicators affected by the timing of elections. Simple time series intervention analysis has been utilized to test the PBC's hypothesis.

Results are summarized as follows:

1. Unemployment tends to be lower in pre-election periods and tends to increase immediately after elections, perhaps as a result of politically motivated employment schemes.

2. Inflation tends to be lower in pre-election periods, perhaps as a result of pre-electoral price regulation.

3. We find an increase in the governmental budget deficit, financed by heavy government borrowings from the central bank and banking sector in the election year.

4. Real GDP growth and real governmental investment growth declines during pre and post-election years.

Thus, empirical evidence supports the presence of opportunistic political behavior in unemployment and inflation and other economic variables during pre-and post-election periods in Pakistan.

1.3 Central Bank Independence and Electoral Politics

The third part of this dissertation concentrates on the sub-field of the political economy that is concerned specifically with the monetary policy and monetary institutions in opportunistic political setup. The central bank

controls the monetary policy. However, there are a number of channels identified through which governments and legislatures have an indirect influence on the monetary policy [Alesina et al. (1997), p.212]. These are as follows:

1. Central bank's institutional structure.
2. Presence of government representatives on central bank's boards.
3. Explicit or implicit obligations of the central bank to accommodate fiscal policy.
4. Informal contacts between treasury and the central bank.
5. The executive power to appoint the central bank's board and governor.
6. The desire of central banks of not displeasing the politicians too much for fear of losing their prerogatives and autonomy.

In recent decades, economists and political scientists have theoretically mapped out a range of issues such as the political vulnerability of monetary policy and proposed institutional solutions. They also have demonstrated empirically that monetary institutions make a difference over time and across countries for monetary policy and economic performance[2].

The idea is that insulating monetary policy from the politicians' direct control and by appointing a conservative (i.e. inflation-averse) central banker, one can reduce inflation from a level that is too high because of the policy makers (opportunistic or partisan) fruitless attempt to reduce average unemployment. In other words, independent central banks are a mean of achieving credibility in policy making and insulating the monetary policy from the political pressures, thus reducing the average and variability of inflation. In response to these findings, countries all over the world have adopted independent central banks, or granted their pre-existing central banks a higher degree of independence.

Central bank independence can be classified into two categories: political independence and economic independence. Political independence is defined in terms of three institutional factors: (1) the procedure for appointing members of the central banks governing body; (2) the legal relationship of the central bank with the government and (3) the formal legal responsibilities of the central bank. While economic independence is measured by

[2]For details see the survey article by (Lohmann,2008).

the autonomy of the central bank in controlling the monetary instruments, banking supervision and central bank obligation in terms of monetizing the fiscal deficit [Grilli, Masciandaro and Tabellini (1991)]. Chapter four describes that the Pakistan central bank is not among the list of independent central banks. There are a number of facts: (1) the State Bank formulates its monetary policy on pre-announced growth and inflation objectives by the government; (2) the president's sole authority on appointment and removal of governing bodies; (3) mandatory involvement of the government in the board; (4) and ever growing deficit financing pressure; speaks a volume about its political and economic independence. In view of Pakistan central bank's political and economic independence, one may suspect the presence of electoral politics and its implication on monetary policy. Therefore, in this work an attempt has been made to investigate the existence of political monetary cycles. The underlying hypothesis is that if monetary policy is used as an attempt to create political cycles, then monetary policy instruments must have an election-related cycle or political monetary cycle (PMC).

Following Abrams and Iossifov (2006), we have estimated a Taylor type interest rate reaction function for the period 1985Q1–2010Q4. The period consists of six parliamentarian election terms. Estimated results shows that whenever there is an increase in the real output gap/real GDP growth and inflationary pressures in the economy, the central bank tightens its monetary policy by raising the discount rate. To test the existence of political monetary cycles, we have introduced some political dummies in the estimated baseline models. The electoral political dummies are found to be negative and significant accepting the PMC hypothesis. Our results are in line with the Alpenda and Honig (2009) and Batool and Sieg (2009b) findings, that assigns central bank independence ranking based on the existence of electoral monetary cycles. We found that the Pakistan central bank is not free from the political pressures as its monetary policy is facilitating the incumbents in the run-up to elections.

Chapter 2

Bread and the Attrition of Power: Economic Events and German Election Results

> All political history shows that the standing of a Government and its ability to hold the confidence of the electorate at General Elections depend on the success of its economic policy (Prime Minster Wilson, in David Watt, Financial Times, March 8, 1968).

2.1 Introduction

There may be many reasons for supporting or opposing a government. However, German elections should be viewed as a sequence of referenda on the government's economic record. Growth of real per capita disposable income explains the variations in aggregate voting outcomes except 1961, 1994 and 1998. In the 1961, 1994 and 1998 elections the German chancellor sought re-election more than twice and received significantly fewer votes.

Although it is obvious that economic conditions affect voting behavior, there is a large body of literature examining the economic variables that are most important for voter decisions[3]. The main questions are:

1. Are voters backward-looking [Key (1968)] or forward-looking [Downs (1957)]?

2. If voters are backward-looking, how far back do they look and how much do they discount past events?

3. Do voters vote according to their pocketbooks or according to the national economic situation [Lewis-Beck (1988)]?

4. How does the political system (accountability) affect the importance of economic variables?

We find support for the hypothesis that voters are backward-looking and that they consider the whole legislative term with only small discounting of past events. They vote according to the national economic situation, i.e., the per capita disposable income growth of the economy. As in Hibbs (2008) for the United States we find that weighted-average per capita real growth in disposable income is the only economic variable that explains vote shares in Germany. Even though the United States and Germany have different political systems the only difference between Germany and the United States we can identify is that the growth effect on vote shares in Germany is only half the effect in the United States. These results raise questions about some of the stylized facts summarized by Lewis-Beck and Paldam (2000). Furthermore, in our estimation, inflation is irrelevant, contrary to the stylized fact that inflation and unemployment/growth are relevant for vote functions.

[3]See Drazen (2000), Hibbs (2006), Lewis-Beck and Stegmaier (2007), Nannestad and Paldam (1994), and Müeller (2003) for surveys of the literature.

Our approach follows the literature explaining aggregate votes in terms of economic fundamentals. Fair (1978) identifies the change in real economic activity in the year of the election and a high discount rate on past economic performance. Lewis-Beck (1988) argues that voters do not vote on the basis of their own personal economic situation, but rather on the basis of national economic performance. Hibbs (1982, 2000) identifies the weighted-average growth of real disposable personal income over the complete term of office as the only important economic variable that explains voting in United States presidential elections. Whereas authors such as Frey and Garbers (1972), Kirchgaessner (1974, 1985) and Frey and Schneider (1979) were pioneers in the field of popularity and policy reaction functions and thoroughly examined Germany, they used popularity rather than election results as the explanatory variable[4]. Obviously, for earlier analysis of the 1970s, there had not been enough data from post-war elections in Germany. However, we explain election results instead of polling results and therefore avoid the problems with polls: they cover fewer persons, do not have real effects and target subjects without advance notice and only before an election campaign.

Whereas the duties of the German federal president are largely representative and ceremonial, power is exercised by the Federal Chancellor ("Bundeskanzler") who heads the Federal Government and thus the executive branch of the political system. He or she is elected by and is responsible to the "Bundestag", Germany's main chamber of parliament, to which members are elected for four-year terms. In the election voters cast two votes, the first called "Erststimme" and the second "Zweitstimme". The first vote is to elect members of parliament in single-seat constituencies using a first-past-the-post voting system. Aggregated second votes determine the seats a party receives in the Bundestag, although the precise number of seats won depends on some special rules[5]. Therefore, the main vote is the second vote because it determines the weight for a party and, indirectly, the chancellor. With just one exception in post-World War II Germany, no single party has ever achieved an absolute majority of seats in the parliament. Therefore, parties join a coalition that elects a member of the largest coalition party

[4]Cusack (1999), Feld and Kirchgaessner (2000) and Geys and Vermeir (2008) use popularity ratings as well.

[5]1. A party has to get 5 percent or three seats in single-seat constituencies to get the proportional share. 2. A seat won in a single-seat constituency is guaranteed. 3. The proportional share is calculated with reference to single states.

as chancellor. These coalitions of parties usually hold for a full legislative term of four years.

This chapter tests and extends the Bread and Peace model of Hibbs (2000) for Germany. To simplify matters, the chapter broadly follows Hibbs (2000). We use, if possible, the same test variables with identical text headings as Hibbs (2000). Section 2 presents results for the model as applied to Germany. In Section 3 we examine the stochastic properties of our explanatory variables. Section 4 shows that other variables that might be useful in explaining election results can be omitted. Section 5 summarizes the results.

2.2 The Model

The Bread and Peace model assumes that growth in real disposable personal income per capita is the best single-variable election predictor because real disposable personal income includes income from all market sources and is adjusted for inflation, taxes, government transfer payments, and population growth. It also includes the income effects of unemployment.

To determine the election result we define as vote share the share of votes[6] for parties that were members of the ruling coalition in the legislative period prior to the election. Hibbs (2000) and Fair (1978) use the two-party vote share in their estimations to incorporate the effect of elections in which there are only two presidential candidates, but sometimes there is a third. They implicitly accumulate votes for the third candidate in proportion to the votes for candidates of the Republican and Democrat parties. This is appropriate for the United States , but is not necessary for the proportional system used in Germany, whereby a voter who wants to support the government may vote for a small coalition party.

We exclude the 1969 and 1983 election cycles. From 1966 to 1969 there was a grand coalition of both large parties and therefore even those voters who were disappointed with economic growth probably voted for one of these parties. In 1983 the government coalition was in office only for six months because one party switched coalition during the term, and therefore a vote for the current government could have been a vote against the poor economic performance of its predecessor.

[6]We use the share of valid "Zweitstimmen".

The equation used to generate the data depicted in Figure 2.1 is:

$$V_t = \beta_0 + \beta_1 \left(\frac{f_t \Delta \ln R_t + \sum_{j=1}^{l_t} \lambda^j \Delta \ln R_{t-j}}{f_t + \sum_{j=1}^{l_t} \lambda^j} \right) + \beta_2 \text{DUR}, \qquad (2.1)$$

where

- V is the sum of vote shares of the parties making up the governing coalition at the time of the election.
- R is the per capita growth in disposable personal income deflated by the consumer price index, and $\Delta \ln R_t$ is the annualized quarter-on-quarter percentage rate of growth, $\Delta \ln R_t = \ln(R_t/R_{t-1}) * 400$ expressed in annualized percentage points (multiplication by 400).
- l_t is the number of quarters from the last election to the current election t, excluding the quarter of and the quarter after the previous election.
- f_t is a variable that captures the weight of the election quarter and equals the fraction of elapsed days on the election day in that quarter to the number of all days in the quarter.
- $\lambda = 0.98$ measures the discounting of past events by voters.
- $f_t + \sum_{j=1}^{l_t} \lambda^j$ is a normalizing constant, so that β_1 registers the response of votes to movements in the weighted average of real income growth rates.
- DUR is a dummy variable as defined in Fair (1996) that equals 1 only if the chancellor is seeking re-election for the third time and 1.25 if the chancellor is seeking re-election for the fourth time. Before 1990, East German citizens were not allowed to cast votes for the Bundestag because the former GDR (East Germany) was an independent state. Therefore, in 1994 chancellor Kohl sought re-election for the third time in the former West Germany (approximately 83 percent of all voters) but for the first time in East Germany (approximately 17 percent of all voters). To capture reunification, the DUR variable is 0.83 for 1994 and 1.0375 for 1998, i.e., Fair's value multiplied by 0.83.

The parameters used to draw the trend line in Figure 2.1 are $\beta_0 = 44.99$, $\beta_1 = 1.98$ (as estimated in Table 2.1) and $\beta_2 = 0$ because DUR=0 for

most elections. To demonstrate the attrition-of-power effect in 1994 and 1998, the predicted vote shares for these years (using the estimated DUR variable) are indicated by triangles. Furthermore, results without the DUR variable are presented in Table 2.7. Considering the time period from 1972 to 2005, a coalition of parties that offers average growth during the term earns a vote share of 47.96 percent and each additional percentage point of growth adds 1.98 percentage points in votes.

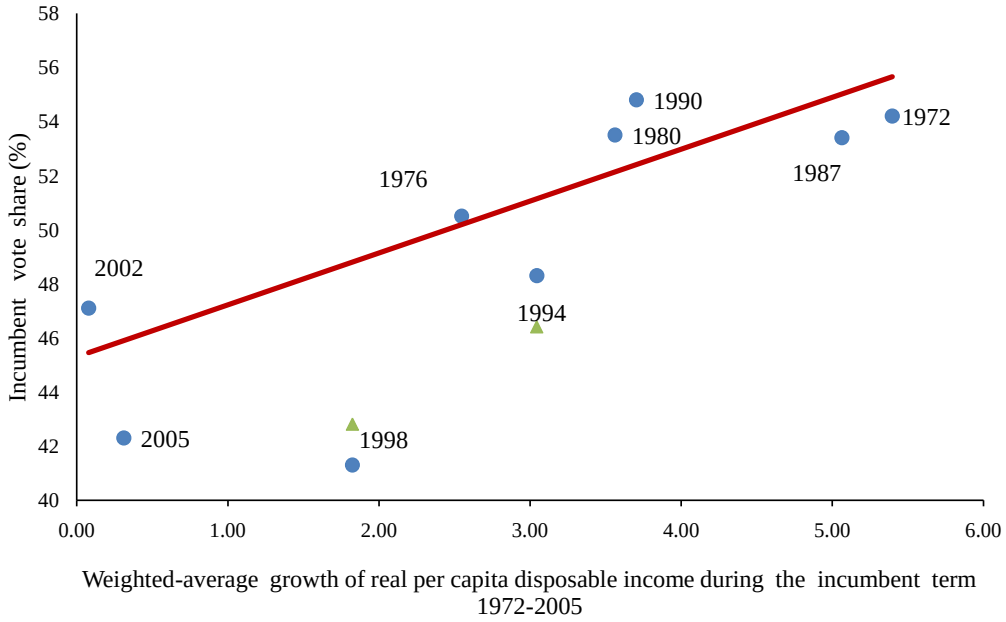


Figure 2.1: Weighted-average Real Per Capita Growth in Disposable Income and Vote Share of the Incumbent Party during 1972–2005 (Quarterly Data).

Incumbent vote share V	1972–2005 R^2=0.79	$N = 9$ elections Adj. R^2=0.72	Root MSE=2.17
	Coef. estimate	Std. error	p-value
Constant β_0	44.99	1.87	0.0000
Weighted-average per capita real disposable personal income growth rate, % (β_1)	01.98	0.53	0.0094
Chancellor for re-election more than twice DUR (β_2)	−5.21	2.31	0.0660

Table 2.1: Model Equation Estimates for Quarterly Data.

Because quarterly data for per capita disposable personal income are not available prior to 1970, we used yearly data to produce Figure 2.2. The

equation used to generate the data depicted in Figure 2.2 is:

$$V_t = \beta_0 + \beta_1 \left(\frac{f_t \Delta \ln R_t + \sum_{j=1}^{l_t} \lambda^j \Delta \ln R_{t-j}}{f_t + \sum_{j=1}^{l_t} \lambda^j} \right) + \beta_2 \text{DUR}, \qquad (2.2)$$

where definitions of parameters are as for Equation (2.1) with the exception of:

- R is the per capita growth in disposable personal income deflated by the consumer price index, and $\Delta \ln R_t$ is the percentage rate of growth, $\Delta \ln R_t = \ln(R_t/R_{t-1}) * 100$.
- l_t is the number of years from the last election to the current election t.
- f_t is a variable that captures the weight of the election year and equals the fraction of elapsed days on the election day in that year to the number of all days in the year.
- $\lambda = 0.65$ measures the discounting of past events by voters.
- $f_t + \sum_{j=1}^{l_t} \lambda^j$ is a normalizing constant, so that β_1 registers the response of the vote share to movements in the weighted average of real income growth rates.
- DUR is defined as for Equation (2.1) and therefore equals 1 in 1961 because the German chancellor Konrad Adenauer was seeking re-election for the third time.

The parameters used to draw the trend line in Figure 2.2 are $\beta_0 = 47.77$, $\beta_1 = 1.62$ (as estimated in Table 2.2) and $\beta_2 = 0$ because DUR=0 for most elections. To demonstrate the attrition-of-power effect in 1961, 1994 and 1998, the predicted vote shares for these years (using the estimated DUR variable) are indicated by triangles. The results are shown in Table 2.2. Furthermore, results without the DUR variable are presented in Table 2.8.

The estimates without the DUR variable for the time periods 1972–2005 (Table 2.7) and 1953–2005 (Table 2.8) show that the coefficient estimates for the constant and the personal income growth rate are in the range of one standard error of each other. This result does not hold if we include the DUR variable. The attrition-of-power effect for the 1961 election seems to be different from the effect in 1994 and 1998. Chancellor Adenauer's attrition-of-power effect in 1961 is greater than that for Chancellor Kohl in the 1994

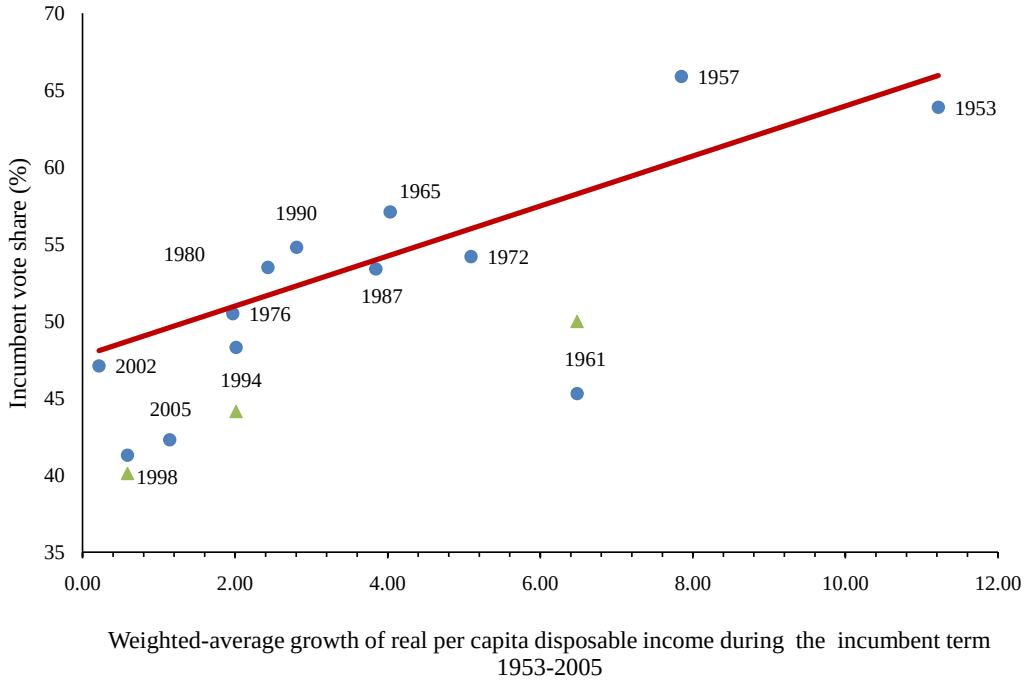


Figure 2.2: Weighted-average Real Per Capita Growth in Disposable Income and Vote Share of the Incumbent Party during 1953–2005 (Yearly Data).

and 1998 elections (even if adjusted for reunification). Therefore, when we measure the attrition-of-power effect using only one dummy variable, we estimate the average effect, i.e., some values are above and some are below the average. For the 1998 election the estimated DUR effect is less than the actual value for quarterly data and higher in the case of annual data (Figures 2.1 and 2.2). In the case of quarterly data, the DUR dummy captures the average effect of 1994 and 1998, so the triangle point is lower than the actual 1994 value and higher than the actual 1998 value. For yearly data the DUR variable captures the average attrition-of-power effect

Incumbent vote share $(V)\%$	1953–2005 R^2=0.78	$N = 13$ elections Adj. R^2=0.73	Root MSE=3.36
	Coef. estimate	Std. error	p-value
Constant β_0	47.77	1.86	0.0000
Weighted-average per capita real disposable personal income growth rate, % (β_1)	01.62	0.35	0.0010
Chancellor for re-election more than twice DUR (β_2)	−8.33	2.65	0.0104

Table 2.2: Model Equation Estimates for Yearly Data.

for 1961, 1994 and 1998. Since the attrition-of-power effect seems to be greater in 1961 than in 1994 and 1998, the average value for quarterly data is greater (larger negative term). As a result, we obtain a lower estimate for 1998, as shown in Figure 2.2. Therefore, we are reluctant to specify precisely the attrition-of-power effect for Germany.

Even though the political systems of the United States and Germany are quite different, our parameter estimates are quite similar to the results of Hibbs (2000, 2008). Comparing our results to those of Hibbs (2008) for 1972–2005 reveals that the constant for Germany is approximately one standard error smaller than the constant for the United States. The reason could be that Hibbs uses the two-party vote share and Germany has a multi-party system. There is a difference in the parameter for the weighted-average growth rate of per capita real disposable personal income, which is approximately two-fold greater for the United States than for Germany.

To estimate the weighting parameter λ we used a non-linear estimation approach. In the United States the election term is always 15 quarters (16 quarters for the presidential term minus the inauguration quarter) whereas in Germany it varies from term to term. For instance, the 2005 election term consisted of 11 quarters, the 2002 election term consisted of 15 quarters and the 1998 election term consisted of 14 quarters. Therefore, we modified the Hibbs (2000, 2008) method for estimating λ and found that λ=0.98 minimizes the sum of squares of residuals for quarterly data and λ=0.65 (which corresponds to a quarterly value of at least 0.90) for annual data. The Hibbs (2000) value is 0.909 and he cannot reject the hypothesis that $\lambda = 1$.

Table 2.6 shows that the largest prediction errors occur for 1957, 1961, and 2005. In 1957 the government profited from the launch of a generous pay-as-you-go pension system. In the 1961 election one of the opposition parties (FDP) campaigned to enter a coalition with the incumbent party to get rid of the incumbent chancellor, and obtained a vote share approximately corresponding to the sum of the prediction error and the attrition-of-power effect. The election in 2005 was early because the chancellor had lost a vote of confidence.

The Bread and Peace model is of significance not only because it identifies fundamentals that are important for election results, but also because it makes it clear that no economic variable other than real disposable per capita income growth adds value or significantly perturbs its coefficients.

Furthermore, Hibbs (2008) explains election outcomes in terms of objectively measured political-economic fundamentals and does not use dummy variables that are coded arbitrarily. However, the argument that voters eventually tire of a politician or a party cannot be rejected, especially for the German elections of 1961 and 1998 [Abramowitz (1988); Campbell and Wink (1990); Haynes and Stone (1994)]. Therefore it is not surprising that attrition of power is an additional variable explaining German election results. [Fair (1996), p. 95] uses a duration variable DUR that increases by $k = 0.25$ for each additional consecutive term of office for a party, starting with a value of 1 if the party has been in power for three consecutive terms. However, we define DUR in terms of the chancellor rather than the party or coalition in office. The United States president is not prone to the same attrition of power as a German chancellor because the United States president can be re-elected just once, whereas a German chancellor can hold office as long as his or her coalition wins majorities.

On the other hand it is impossible to identify statistically a peace effect in Germany. The number of German military fatalities due to unprovoked, hostile deployment of German armed forces in foreign conflicts not sanctioned by a formal parliamentary declaration of war, which is the Hibbs (2008) definition of the peace variable, is zero for the whole period. Fair (1996) also corrects for war years, but defines war elections as dominated by World War I or II. The period in the present study does not cover either global conflict. To summarize, it is impossible to confirm the peace part of the Bread and Peace model for Germany.

2.3 Stochastic Properties of Real Per-capita Personal Disposable Income

In this study, as usual when testing vote share functions, the number of observations is rather small. Therefore, it is of particular importance to take into account the stochastic properties of the dependent variable. We have estimated the equation:

$$\Delta \ln R_t = \alpha + \delta t + \gamma \ln R_{t-1} + \sum_{i=2}^{p} \beta_i \Delta \ln R_{t-i+1} + r_t \qquad (2.3)$$

to test for unit roots using the Augmented Dickey and Fuller (1979) method. The estimated values for α, δ, and γ are shown in Table 2.3, with lag lengths reported in column p of the Table 2.3. First we check for a deterministic trend in the estimated model. Regression 1 shows that the δ term is insignificant, i.e., there is no deterministic trend in the real disposable income per capita growth. Therefore, we omit the trend term in regressions 2 and 3 in Table 2.3. In regressions 2 and 3 (Table 2.3), if $\gamma = 0$, the series has a unit root, which means that it is non-stationary. The results for regression 2 show that the t-value of γ is less than the ADF critical value. Therefore, we accept the null hypothesis that the series has a unit root. To make the series stationary, we take the first-difference of log per capita disposable income, i.e., the growth in real per capita disposable income. The test result for regression 3 (Table 2.3) shows that the t-value of γ is greater than the ADF critical value. This implies that growth in real per capita disposable income is stationary. It follows that quarter-to-quarter changes in log real disposable income per capita growth $\Delta \ln R_t$ are unforecastable, apart from an annualized drift rate α of approximately 0.23 percent per quarter. Therefore, r_t can be interpreted as "news" in real disposable income per capita growth rates that are permanently embodied in future real income stocks $\ln R_t$. Voters reward or punish the incumbent party at election time by evaluating the good or bad news that represents changes in the time path of mean real disposable personal income.

Model: $\Delta \ln R_t = \alpha + \delta t + \gamma \ln R_{t-1} + \sum_{i=2}^{p} \beta_i \Delta \ln R_{t-i+1} + r_t$

	α	δ	γ	p	$AdjR^2$	$LM\chi^2 sig.level$	ADF test value
1.	0.47 (1.58/0.12)	0.00009 (0.86/0.39)	-0.055 (-1.54/0.12)	4	0.87	0.28	-3.43
2.	0.23 (1.92/0.05)		-0.03 (-1.89/0.06)	4	0.86	0.36	-2.88
3.	0.003 (1.73/0.08)		-1.39 (-5.38/0.0000)	3	0.95	0.12	-2.88

Notes: Values in parentheses are (t-ratio/significance level).
1991:4, the first period of the revised disposable income, is omitted.

Table 2.3: Stochastic Properties of the Log Real Per Capita Disposable Personal Income Growth (1970:01–2005:04).

Table 2.4 supplies additional evidence that log real disposable income per capita growth rates are unforecastable. Regressions 1, 2 and 3 (Table 2.4) show that runs of good and bad news have no systematic relationship to the party of the chancellor. If this were not the case, a voter motivated by real income performance would be endowed ex-ante with valuable in-

$\Delta \ln R_t - \alpha - \gamma \ln R_{t-1} - \sum_{i=2}^{p} \beta_i \Delta \ln R_{t-i+1} = r_t$
$r_t = C + PoliticalPeriods_{t-1}$

	C	CDU term	SPD term	Terms following party re-election
1.	-0.001	0.003		
	(-0.56/0.57)	(0.80/0.42)		
2.	0.002		-0.002	
	(0.56/0.57)		(-.79/0.42)	
3.		0.002	-0.002	
		(0.81/0.42)	(-0.75/0.45)	
4.	0.003			-0.004
	(0.99/0.32)			(-1.14/0.25)

Notes: Values in parentheses are (t-ratio/significance level).
1991:4, the first period of the revised disposable income, is omitted.

Table 2.4: Election terms and Per Capita Real Disposable Personal Income Growth Rate "News" 1970:1–2005:4.

formation about the economic competence of candidates. The results for regression 4 (Table 2.4) indicate that the performance of incumbent parties also yields no useful information about likely growth rate deviations from drift immediately following their re-election.

2.4 Omitted Variables

To test the robustness of the estimated model, we investigated a number of variables other than disposable income growth and duration that are highlighted in the literature on vote shares. The results of these regression experiments are shown in Table 2.5. The second column of each row reports parameter estimates, t-ratios and significance levels (p-values) for the additional test variable. The third column gives the significance level for the null hypothesis of parameter equivalence between the bread and attrition of power model coefficients obtained for each test regression equation and the corresponding basic bread estimates in Table 2.1[7]. All baseline variables remain significant upon introduction of the following variables.

Old news: In our model we assume that backward-looking voters review the whole election period but ignore economic growth that occurred earlier. Therefore, we have to test whether economic performance prior to the last election influences voting decisions in the current election. As in Hibbs (2000), we use the lagged incumbent parties

[7]Quarterly data are not available prior to 1970, and therefore robustness tests are based on the data set for 1972–2005.

Model: $V_t = \beta_0 + \beta_1 \left(\frac{f_t \Delta \ln R_t + \sum_{j=1}^{l_t} \lambda^j \Delta \ln R_{t-j}}{f_t + \sum_{j=1}^{l_t} \lambda^j} \right) + \beta_2 \text{DUR} + \beta_3 \text{test variables}$			
Test variable(s)		Test variable parameter estimates (t-ratio/ signif. level)	Signif. level for equivalence of $\hat{\beta}_0, \hat{\beta}_1$, to benchmark estimates in Table 2.1
1.	Old news (Incumbent coalition's vote share at last election)	0.30 (1.06/0.33)	0.60
2.	Inflation	0.25 (0.42/0.69)	0.94
3.	Unemployment rate	−0.10 (−0.29/0.77)	0.95
4.	Change in unemployment	−0.21 (−0.41/0.69)	0.97
5.	Election year output growth	0.25 (0.40/0.70)	0.96
6.	Inflation over the term	0.11 (0.76/0.47)	0.83
7.	Number of high-growth quarters, good news	0.08 (0.21/0.83)	0.97
8.	Volatility (standard deviation) of $\Delta \ln R$ over the term	0.28 (0.50/0.63)	0.89
9.	Per capita real govt. expenditure over the term	0.03 (0.66/0.53)	0.94
10.	Govt. expenditure in proportion to GDP over the term	-0.07 (-0.16/0.87)	0.99
11.	Stock prices: percent change in DAX30 for 10 months prior to the election month	-0.03 (−0.57/0.59)	0.95
12.	Average yield spread (10-year bonds rate minus 1-year bond rate) during the 3 months following the election	−0.49 (−0.39/0.71)	0.95

Table 2.5: Robustness of the Model to Additional Variables.

vote share, which summarize the economic performance of the pre-election period, termed "old news", as the test variable. The coefficient estimate of old news reveals that there is no spillover effect associated with the past performances of incumbent parties on current vote shares. The coefficient estimate for the vote share of the incumbent party in the previous election is essentially zero and the p-value for the hypothesis of joint parameter equivalence is 0.60.

Inflation and unemployment: From the beginning of voting economics, inflation and unemployment have been the most popular measures of performances of incumbent parties and of voters responses in terms of

rewarding or punishing governments. Here we included the weighted average inflation and weighted average unemployment over the term as additional explanatory variables. Both variables were not significant and did not improve the fits of the models estimated in Table 2.1. Similarly, a change in unemployment is redundant, with a insignificant t-value, and a p-value of 0.97 shows the parameter equivalence to the estimates in Table 2.1.

Fair's economy: Test variables 5, 6 and 7 (Table 2.5) are Fair's three well-known variables: $g3$, the average growth rate of real per capita GDP in the first three quarters of the election year; p, the absolute value of inflation over the election term; and n-good, the number of "good news" quarters during the term in which annual GDP growth exceeds potential GDP growth, which we calculate using a Rodrick-Prescott 100 filter[8]. The results demonstrate that these three variable adds no explanatory power to the estimated regression. However, the "good news" variable is significant if we define a reference value to make it significant or define it as the number of quarters in which GDP growth is higher than average growth[9]. Test regressions 5, 6 and 7 in Table 2.5 demonstrate that the Fair variables do not add any value to the Germany "Bread and the Attrition of Power model".

Macroeconomic volatility: Cameron (1978) and Rodrik (1999) suggest the macroeconomic stability of economic wellbeing is another important variable for democratic political outcomes. Following Hibbs (2000) we tested volatility as the standard deviation of disposable income growth over the term in test regression 8 (Table 2.5). Volatility was also insignificant and the p-value demonstrates parameter equivalence to the coefficient estimates in Table 2.1. We also tested volatility based on inflation, but again obtained insignificant results.

Fiscal conservatism: Pelzman (1992) found that each percentage point of growth in real federal spending per capita sustained for a year decreases the vote share of the incumbent party in presidential elections

[8]Since GDP growth patterns in Germany are dynamic over time in the sense that average growth was approximately 3.35 before reunification in 1991 and approximately 1.18 thereafter, we have incorporated the concept of good-news quarters as quarters with growth greater than potential output growth.

[9]Fair uses a reference value of 3.2 (and 2.9 in some cases) without relating them to fundamentals, but only to obtain a better fit.

by more than three percentage points. The reason is that voters realize that additional fiscal expenditure will create excess tax burdens on them. Test regressions 9 and 10 in Table 2.5 demonstrate that cumulative changes in real per capita expenditure over the term and cumulative changes in government spending in proportion to GDP had no significant impact on the vote share of the incumbent coalition.

Changes in wealth (Stock prices): Fama (1990) and Schwert (1990) propose that stock price change is a valuable indicator of investor market sentiment and forward macroeconomic expectations. Gleisner (1992) and Haynes and Stone (1994) report that each percentage point increase in the Dow Jones Industrial Average registered between January and October of the election year yields a vote share harvest of between 0.4 and 0.7 percentage points for the incumbent party's presidential candidate. To test the sensitivity of vote share to market sentiments and macroeconomic expectations, we used the DAX30 index. Conditioned on the estimated "Bread and the Attrition of Power model" test regression 11 (Table 2.5), we find that stock price changes have no significant impact on the vote share of the incumbent coalition.

Interest rate spread: Forward-looking voters may use interest rate spreads as a predictor of output changes in advance [Estrella and Hardouvelis (1991), Estrella and Mishkin (1997)], i.e., they expect that the larger the interest rate spread, the higher will be future output growth and the lower will be the future probability of a recession. The argument is endorsed by Berry et. al. (1996), who find evidence that the interest rate spread affects employment, growth and inflation, which in turn directly or indirectly affects voter behavior. Combining forward-looking voters and interest rate spreads as an indicator of future growth, it follows that the higher the interest rate spread, the higher would be the vote share of the incumbent's party. In the present study, interest rate spread is calculated as the difference between the long-term (10-year) bond yield and the short-term bond yield (bonds with a 1-year maturity period). The regression results in model 12 (Table 2.5) show that interest rate spread has no significant impact on the estimated vote share in Table 2.1.

2.5 Conclusions

In Germany, the votes in general elections are determined by the weighted-average growth of real per capita disposable income of the economy during the election term. Considering the time period from 1972 to 2005, a coalition of parties that offers average growth during the term earns a vote share of 47.96 percent and each additional percentage point of growth adds 1.98 percentage points to votes. This result is in line with the Hibbs (2000, 2008) Bread and Peace model for United States presidential elections. However, the effect on the vote share is smaller in Germany than in the United States, arguably because the political systems are very different or economic variables are not as important in Germany. Furthermore, in the 1961, 1994 and 1998 elections, the vote share was significantly lower because the chancellor was seeking re-election after more than two terms in office and was a victim of the attrition-of-power effect. This result coincides with the Fair (1996) "duration" effect and the time-for-change effect of Abramowitz (1988, 2001). It is impossible to identify statistically a peace effect in Germany because the number of German military fatalities due to unprovoked, hostile deployment of German armed forces in foreign conflicts not sanctioned by a formal parliamentary declaration of war is zero for the time period considered in this paper, i.e., after World War II. As in Hibbs (2000), no other economic variables add value or significantly perturb the equation's coefficients[10].

[10]Acknowledgments: The authors thank two anonymous referees and the editor for very helpful comments. The views expressed in this paper represent exclusively the authors' own opinions and do not necessarily reflect those of the State Bank of Pakistan.

Election year	Incumbent parties	% Vote share	% predicted vote share	Prediction error	Weighted average real income growth	real income growth effect on votes	Attrition of power	Attrition of power effect on votes
1953	CDU/FDP/GB/DP	63.9	65.96	02.06	11.22	18.17	0.00	0.00
1957	CDU/FDP/GB/DP	65.9	60.49	−5.41	7.85	12.72	0.00	0.00
1961	CDU	45.3	49.98	04.68	6.48	10.50	1.00	−8.3
1965	CDU/FDP	57.1	54.29	−2.81	4.03	06.53	0.00	0.00
1972	SPD/FDP	54.2	56.01	01.81	5.09	08.25	0.00	0.00
1976	SPD/FDP	50.5	50.95	00.45	1.97	03.19	0.00	0.00
1980	SPD/FDP	53.5	51.69	−1.81	2.43	03.94	0.00	0.00
1987	CDU/FDP	53.4	53.98	00.58	3.84	06.23	0.00	0.00
1990	CDU/FDP	54.8	52.31	-2.49	2.81	04.55	0.00	0.00
1994	CDU/FDP	48.3	44.14	−4.16	2.01	03.26	0.83	−6.9
1998	CDU/FDP	41.3	40.12	−1.18	0.59	00.95	1.04	−8.6
2002	SPD/Grüne	47.1	48.09	00.99	0.21	00.35	0.00	0.00
2005	SPD/Grüne	42.3	49.60	07.30	1.14	01.85	0.00	0.00

Table 2.6: Votes, Predictions and Effects of Fundamental Determinants in German Elections (fits and effects computed from equation estimates in Table 2.2).

Incumbent vote share (V)%	1972-2005 R^2=0.64	$N = 9$ elections Adj. R^2=0.51	Root MSE=2.90
	Coef. estimate	Std. error	p-value
Constant β_0	43.34	2.33	.0000
Weighted-average per capita real disposable personal income growth rate, % (β_1)	2.16	0.72	.0233
Lambda weight (λ)	0.98	0.07	0.0000

Table 2.7: Model Equation Estimates for Quarterly Data without DUR.

Incumbent vote share (V)%	1953–2005 R^2=0.56	$N = 13$ elections Adj. R^2=0.48	Root MSE=4.74
	Coef. estimate	Std. error	p-value
Constant β_0	45.34	2.42	.0000
Weighted-average per capita real disposable personal income growth rate, % (β_1)	1.77	0.54	.0086
Lag weight (λ)	0.65	0.45	0.1804

Table 2.8: Model Equation Estimates for Yearly Data without DUR.

Variables	Units	Sources
Incumbent parties vote	Percentage share	Der Bundeswahlleiter
Personal disposable income	Mrd in Euro	Statistisches Bundesamt
Population	Thousand	Statistisches Bundesamt
Consumer price index	Base 2000 =100	Deutsche Bundesbank
Gross domestic product	Euro Billions	Deutsche Bundesbank
Government expenditure	Euro Billions	Deutsche Bundesbank
Unemployment rate	In percent	Deutsche Bundesbank
DAX 30 index	In percent	Deutsche Bundesbank

Table 2.9: Data Variables and Sources.

2.6 Graphical Representation of Data Series

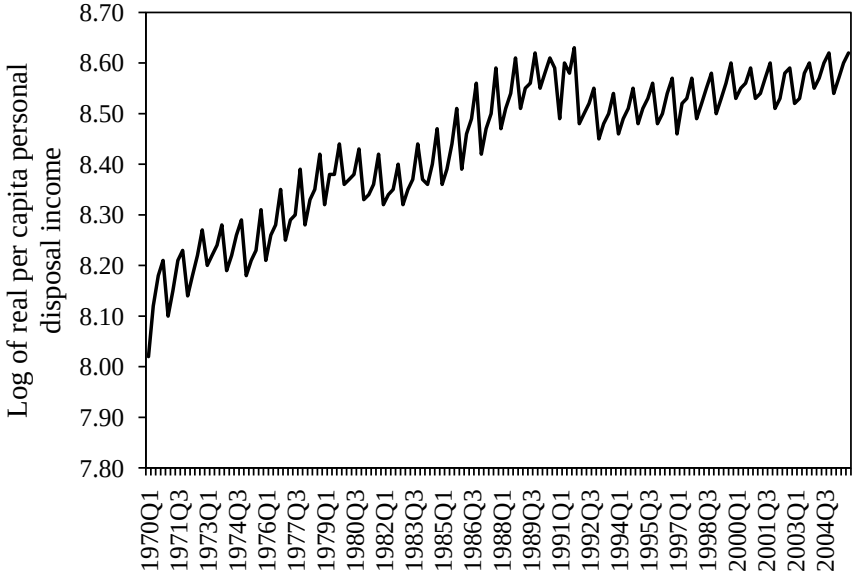


Figure 2.3: Log of Real Per Capita Personal Disposal Income 1970-2005.

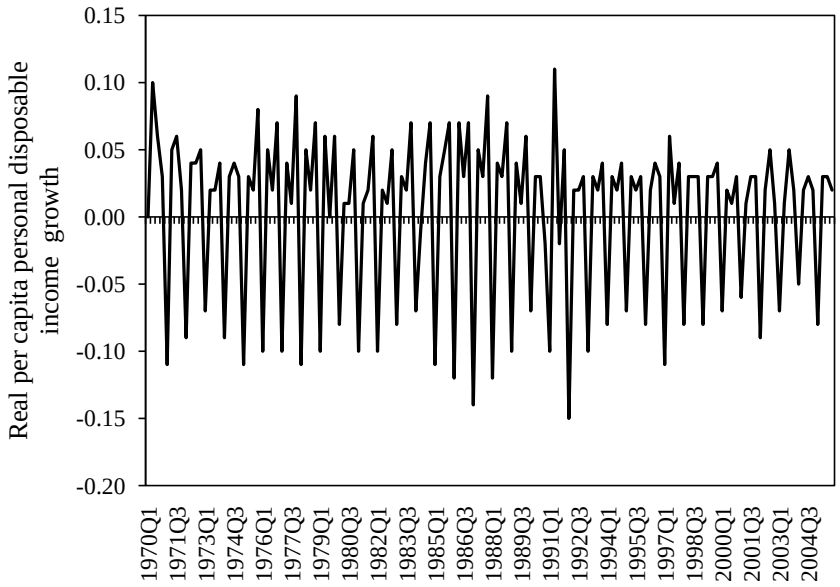


Figure 2.4: Real per Capita Personal Disposable Income Growth 1970-2005.

Chapter 3

Pakistan, Politics and Political Business Cycles

> You can fool all the people some of the time, and some of the people all the time, but you cannot fool all the people all the time (Abraham Lincoln–American 16th US President, 1861).

3.1 Introduction

Political business cycle theory formalizes the common perception that politicians use expansionary economic policies in a pre-election period to enhance their chances of re-election[11]. Opportunistic politicians are primarily interested in retaining office. When they face an electorate that prefer high growth, low unemployment and low inflation politicians may use expansionary fiscal or monetary polices to create a short term economic boom before and during the election campaign. Naive voters are unable to understand the politician's manipulation of the economy and its adverse after effects. On the contrary, they enjoy the boom and re-elect the politician. Because inexperienced voters are prone to this manipulation, the common view is that political business cycles are more a phenomenon of less-developed than developed countries [(Brender and Drazen,2005b)].

The present study investigates the existence of political business cycles in case of Pakistan during the period 1973–2009. During this period Pakistan has undergone seven parliamentarian election terms. Single-country studies of the political business cycle often suffer from a small number of elections. However, the political business cycle is a phenomenon that may or may not occur in a country and a multi-country study is not able to answer the question if there have been political business cycles in a special country or not. To proof the existence of a political business cycle in Pakistan, which is the aim of this study, a single country study is inevitable.

A number of studies have analyzed politically motivated business cycles for both developed and developing countries. Generally, the empirical political business cycle literature can be divided into three main categories. The first category attempts to locate political cycles in macroeconomic outcomes. These models are been focused, almost exclusively, on four macroeconomic indicators: growth, inflation, unemployment, and income [Alesina et al. (1999); Andrikopoulos et al. (2004); Grier (2008); Hibbs (1977); Krause (2005); and Suzuki (1992)]. In the short run policy results on growth and unemployment may not be obvious enough to voters, so governments may try to stimulate those policy variables that have direct monetary benefits to voters like government transfers, tax cuts, sub-

[11]Following the seminal papers by Nordhaus (1975, 1989) and MacRae (1977), many authors developed a deep understanding in the political business cycle. See Drazen (2000), Gärtner (2000), Alesina et al. (1992); Alesina (1993), and Paldam (1997) for surveys, and Blomberg and Hess (2003), Caleiro (2009), Saporiti and Streb (2008) and Sieg (2006) for current theoretical papers.

sidies and special employment schemes etc. [Hibbs (2000); Batool and Sieg (2009b)]. The second major category of political business cycle research concentrates on these policy instruments instead of macroeconomic outcomes. The evidence for this type of a political business cycle is generally stronger than that for macroeconomic outcomes [Alesina et al. (1999); Coelho et al. (2006); Drazen (2000); Cerda and Vergara (2008); Keech and Pak (1989) and Tufte (1978)]. The third major category of research focuses on a unique policy instrument: monetary policy (also known as the political monetary cycle). Various studies for many countries are found on central bank monetary policy and political business cycles [Abrams and Iossifov (2006); Beck (1987); Berger and Woitek (2001); Grier (1987, 1989); Havrilesky (1993); Maloney et.al. (2003); Persson and Tabellini (2003); Williams (1990) and Woolley (1994)]. To cover all three categories this study focus on growth, unemployment, inflation and some fiscal and monetary policy indicators.

Despite plenty of empirical evidence found on political business cycles for both developed and developing countries, this area of research remains untouched in case of Pakistan. The present study fills the gap. The chapter is organized as follows. Section 2 discusses the model specification and the research methodology. Section 3 provides empirical evidence using annual data from 1973 to 2009 for various macroeconomic variables. Section 4 gives a summary of our findings and a conclusion.

3.2 Model and Research Methodology

Turning to the empirical literature, politico-economic models have been tested with a time-series approach. The usual research strategy is to isolate a key macroeconomic variable and ascertain whether or not in election and pre-election years this variable behaves differently than in non-election years. The earlier procedures entailed simple comparisons of the average value of the actual unemployment and inflation rates in election and non-election years, or according to the party in power. Generalizing this approach, McCallum (1978) and most of those who followed, estimated univariate time series models and tested for shifts in the intercept parameter [Pack (1987); Keil (1988)]. According to this procedure the impact of the political sector is viewed as an exogenous intervention in the economic process, producing a cyclical (political business cycle) or temporary shift in the mean value of the time series. Accordingly, the test is for the significance

of an appropriately defined dummy variable, the intervention variable that is added to a uni-variate ARMA (ARIMA) representation of the series.

$$X_t = c + \sum_{p=1}^{n} \theta_p X_t - p + \sum_{q=1}^{m} \phi_q \delta_t - q + \sum D_i + \delta_t \tag{3.1}$$

To illustrate, let X_t be a variable of interest and assume that X_t can only be positive and follows a stationary first-order autoregressive moving average process. Where $\theta_1, \ldots, \theta_p$ in Equation (3.1) are the parameters of autoregressive terms of the model, while $\phi_1, \ldots, \phi_q$ in Equation (3.1) are the parameters of moving average terms of the model, c is a constant, and δ_t (Equation 3.1) is the error term assumed to be independent identically-distributed random variables (i.i.d.) sampled from a normal distribution with zero mean: $\delta_t \sim N(0, \sigma^2)$ where σ^2 is the variance. We begin with the construction of a benchmark Autoregressive Moving Average (ARMA) models for unemployment and inflation i.e Phillips curve hypothesis. And Autoregressive Integrated Moving Average (ARIMA) models for other fiscal and monetary policy indicators, as the fiscal and monetary variables including GDP are integrated of order one. To test the impact of politics on macroeconomic variables we have defined the following three political dummy variables:

$$ED_1 = \begin{cases} 1, & \text{if it is election year} \\ 0, & \text{otherwise} \end{cases}$$

$$ED_2 = \begin{cases} 1, & \text{if it is election year or one year preceding to a election} \\ 0, & \text{otherwise} \end{cases}$$

$$ED_3 = \begin{cases} 1, & \text{if it is one year after election} \\ 0, & \text{otherwise} \end{cases}$$

The positive and negative signs of these dummy variables will determine the positive and negative impact of elections on macroeconomic outcomes and aggregate demand driven by monetary and fiscal policy instruments. For example, if a government tries to increase growth and employment before an election and uses expansionary fiscal and monetary policies, then ED_1 or ED_2 or both should be positive in the estimated equations of growth, budget deficit, monetary aggregates and government budgetary borrowing. If the government adopts a contractionary policy shift in post-election year, then these instruments show the downward trend that can be

measured by a negative sign of ED_3. It should however be noted that in case of inflation and unemployment, pre-electoral variables should denote decrease and should have negative signs, while the post-election variables should have a positive sign to reflect the impact of pre-election expansionary policies.

Quarterly or high frequency data is recommended to investigate the issue of political business cycle. But in case of Pakistan, the national accounts and unemployment data is available only in annual frequency. Therefore we have used the annual time series data from 1973–2009[12] for the proposed variables. The underlying study period covers seven elections: 1977; 1988; 1990; 1993; 1997; 2002 and 2008. The election dates and corresponding fiscal years are shown in Table 3.6.

3.3 Empirical Results

First we test predictions of the classic opportunistic political cycle model by Nordhaus (1975). The model predicts political manipulation in unemployment and inflation. Analogical political behavior implies cycles in macroeconomic variables such as growth, money supply, fiscal deficit, and budgetary borrowing etc.

3.3.1 Unemployment, Inflation and Opportunistic Business Cycle

Estimated ARMA model results in Table 3.1 show that ED_2 is significant and has a negative sign. During the election year and one year prior to the election year the unemployment rate was reduced by 19 percent in comparison to other years. The political dummy variable ED_3 for the post-election year is positive but not statistically significant. This result may attribute to the switch from expansionary to contractionary policy when an incumbent party wins the election, and cancellation of old employment generation schemes if the opposition is elected into office. Both results fully support the political business cycle theories.

Inflation is another important key to understand the political business cycles. Election periods cause great sensitivity on the side of the government to keep quiet about increases of regulated prices by deferring them

[12]Before 1971, the present Bangladesh was a part of Pakistan called West Pakistan. Therefore, we have excluded the earlier time period from the analysis.

Table 3.1: Unemployment, Inflation and Political Business Cycles.

Variables	Unemployment	Inflation	
Constant	1.1133***	0.0864***	0.0769***
Deterministic trend	0.0265***		
AR(1)	0.9522***	0.6029***	0.4767***
AR(2)	-0.3255*		
MA(1)			
MA(5)		-0.8984***	-0.8885***
MA(7)	-0.9027***		
MA(8)			
ED_1		-0.0228***	
ED_2	-0.1911***		
ED_3	0.0207	0.0033	0.0157**
n	35	35	35
R^2	0.95	0.74	0.66
D.W stat	1.97	1.88	1.97
S.EE	0.10	0.102	0.026

***, ** and * denote rejection of null hypothesis at 1 %, 5 % and 10 % level of siginificance respectively. Unemployment rate has been taken in logarithmic form.

to the post-election period. Thus, after each election it is common to hear oppositional parties accusing the returned party for exploiting the myopic expectations of voters to boost their probability of winning the election. However, if the incumbent party looses the election despite deferring price increases, then the winning party would again accuse the former incumbent party for leaving a huge economic burden by not increasing the regulated prices. This has to be fulfilled by the new government who would immediately receive a negative point in its honeymoon period.

Estimated ARIMA model for inflation in Table 3.1 shows ED_1 with a negative sign, that means during the pre-election year the inflation has been kept lower by 2.2 percentage points in comparison to other years.

Non-realized price increases in regulated sectors are subsidized by the government through deficit financing. Consequently, the budget deficit rises and creates an inflationary pressure and debt sustainability problem in the post-election period. The post-election year dummy variable found to be insignificant, however if we estimate the ARIMA model and incorporate only the post-election year dummy and ignore the pre-election effect then the post election dummy is found to be statistically significant (see Table 3.1, column 4).

Table 3.2: Fiscal and Monetary Variables and Opportunistic Business Cycle.

Variables	Real GDP Growth	Real Government Investment Growth	Fiscal Deficit as percent of GDP
Constant	0.0619***	0.0919***	1.6219***
AR(1)			-0.7198**
MA(2)	0.2968***		
MA(4)	0.1919**		
MA(5)	-0.8061***	-0.9544***	
MA(6)			-0.8820***
MA(9)		-0.857***	
ED_1		-0.1434***	0.1423***
ED_2	-0.014***		
ED_3	-0.032***	-0.1351***	
n	36	36	36
R^2	0.50	0.68	0.65
D.W stat	2.05	1.61	2.22
S.EE	0.015	0.07	0.17

***, ** and * denote rejection of null hypothesis at 1 %, 5 % and 10 % level of siginificance respectively.

Both unemployment and inflation results are consistent with the pre-election political manipulation as the politicians try to maximize their chance of re-election by increasing the employment conditions and controlling the inflation artificially during the election and prior to the election period. But the post-election year dummy variables are found to be statistically insignificant but have correct signs, employing that post election effect is less pronounced. The evidence supports the argument by Ginsburgh and Michel (1983), pointing the fact that if there is government fall and resultant early election as in case of Pakistan in 1990, 1993 and 1997 before the legal term, the political business cycles would be less pronounced.

The GDP growth estimated ARIMA model (see Table 3.2) does not provide any supporting evidence for the Nordhaus (1975) opportunistic business cycle theory as political variable ED_1 and ED_3 both estimated to be negative i.e. have the wrong sign. Miss-allocation of resources during and after the election period could be the reason. Although the results seems to be fine to some extent, there is concern regarding the stationarity of the variable series raised by Enders (2004). The basic underlying assumption of the ARMA model is the stationarity of the variable over time. However a simple ADF/DF test shows that inflation and GDP growth are stationary at

level, while the unemployment is found to be integrated of order one which makes the unemployment ARMA model results suspicious. Therefore, the discussion remains inconclusive and there is a need to further exploration of the phenomena.

3.3.2 Fiscal and Monetary Variables and Opportunistic Business Cycle

The original opportunistic business cycle model by Nordhaus (1975) focuses on political cycles in inflation, employment and growth which are induced by monetary policy. However, Rogoff (1990) model is grounded in the use of fiscal policy tools. Recently, Drazen (2000) has argued that PBC models based on monetary surprises are unconvincing, because of their implicit assumption that the incumbent party directly controls the monetary policy.[13] Instead Drazen (2000) builds on Rogoff (1990) to derive a model in which PBC arises from active fiscal policy interventions that are later accommodated by the monetary expansions. Various empirical studies are in line with this approach that have been carried out on monetary and fiscal budget political cycles [Brender and Drazen (2008)]. Following Schuknecht (1996) we have focused on fiscal deficit, government investment, monetary aggregate (M2) and government budgetary borrowing. We have first applied the unit root test to test the stationarity assumption of the variables. The ADF results show that all variables are integrated of order one that requires 1st difference for the series to be stationary (see Table 3.5). In a second step we have estimated the parsimonious ARIMA model for these fiscal and monetary variables. The results are shown in Tables 3.2 and 3.3.

The ARIMA model result for real government investment states that ED_1 and ED_3 are both negative which implies that government investment has declined by 14 percent (13 percent) during the election (post-election) year. In contrast, the pre-electoral variable ED_1 is positive in the budget deficit as percentage of GDP equation, which can quantify a 14 percent increase in the budget deficit during the election year. This may be attributed to the fact that during the election campaign the government uses expansionary policies and spends more on current expenditures like tax cuts, subsidies, price supports and election campaigns etc. and not on investment. These current expenditures helps the government to realize

[13]See, however, Sieg (1997), for monetary cycles even if central banks are independent.

Table 3.3: Fiscal and Monetary Variables and Opportunistic Business Cycles.

Variables	Net Government Budgetary Borrowing (growth)	Government Budgetary Borrowing from Banking Sector(growth)	Broad Money Supply ($M2$) (growth)
Constant	0.1060***	0.1085***	0.1339***
AR(5)		-0.5937***	
AR(10)	-0.4828***	-0.8654***	
MA(1)	0.3088**		
MA(3)	0.3077**	0.8353***	
MA(4)	0.8605***		
MA(5)			-0.987***
ED_1	0.1196***	0.1381***	0.0481***
ED_3		-0.077***	-0.0233**
n	26	26	35
R^2	0.62	0.59	0.59
D.W stat	2.23	1.85	2.05
S.EE	0.08	0.08	0.03

***, ** and * denote rejection of null hypothesis at 1 %, 5 % and 10 % level of siginificance respectively.

their short term objective i.e. collect votes, but do not have any significant impact on macroeconomic growth.

Such fiscal deficits are financed by internal or external sources especially accommodated by the countries banks and create additional impact on monetary policy variables. In this regard we have expanded our analytical framework to the monetary sector by including $M2$, net government budgetary borrowing and budgetary borrowing from the banking sector.

The ARIMA model results show that ED_1 has the expected signs in case of net government budgetary borrowing and borrowing from the banking sector, showing 11 percent and 13 percent increase during the election years (see Tables 3.2 and 3.3). Both effects demonstrate clear patterns of opportunistic politically motivated fiscal expansion accommodated by the monetary sector. These type of government borrowing can cause a sudden rise in money supply and induce inflationary pressures in the economy. Estimated ARIMA model results for $M2$ confirm this monetary expansion as it registered a 4 percent rise during the same period. However this is less than the rise in the budgetary borrowing, this may be due to the fact that Pakistan's current $M2$ definition has two main components: Net Domestic Assets (NDA) and Net Foreign Assets (NFA). Therefore, it might be possible that the budgetary borrowing rise is offset by the contraction in the

other component such as NFA, and not exactly depicted in the $M2$ expansion. During the post-election year, $M2$ growth registered a contraction by approximately the same percentage (2 percent), consistent to (7 percent) decline in the budgetary borrowing from the banking sector, representing a tight monetary stance taken to curtail the inflation in the post-election year.

3.4 Conclusion

Inexperienced voters are a well known breeding ground for opportunistic political business cycles. In this study we proved that Pakistan's society suffers from such political motivated inefficient economic policies. We have used annual data for unemployment, inflation, growth and other macroeconomic indicators for the period 1973–2009. The study has used simple intervention analysis in the time series data to examine the fluctuations during the election and non-election years. Results show that unemployment rate has been significantly reduced during the election and one year before the election year. Inflation shows similar patterns as during the election period it is kept down by 2.2 percent. The reason could be that the ruling party keep the regulated prices artificially low before election and delays the cost push inflation by the post-election period. This is consistent with the recent surge in energy prices in Pakistan, where just after the election of 2008 the government cut all the subsides and raised energy prices that has been deliberately kept low up to the end of the election. However the post election manipulation is absent or we can say less pronounced in both unemployment and inflation case.

On the fiscal side we have seen an increase in the budget deficit accommodated by net government budgetary borrowings and borrowing from the banking sector resulting in monetary expansion and inflationary pressure in the economy during the election year. To summarize, our findings of substantial electorally motivated policy distortions without associated impacts on real GDP and investment suggest that Pakistan's society pays the cost of political business cycles but realizes none of the benefits.

Name	Description	Unit	Sources
U	log(Unemployment rate)	In percentage	Labor Force Survey
P	log(consumer price index)	Base at 1999–00	State Bank of Pakistan
Y	log(Real GDP)	Base at 1999–00 prices	State Bank of Pakistan
Ig	log(Real government investment)	Base at1999–00	State Bank of Pakistan
Gbbn	log(Net government budgetary borrowing)	PKR in millions	State Bank of Pakistan
Gbbs	log(Government budgetary borrowing from the banking Sector)	PKR in millions	State Bank of Pakistan
M2	log(Broad money supply)	PKR in millions	State Bank of Pakistan
Fisb	log(Fiscal deficit as %age of GDP)	PKR in millions	State Bank of Pakistan

Table 3.4: Data Variables and Sources.

Variable Series	DF/ADF Test Value	lag	Deterministic	Decision
U	-1.917812	0	c	I(1)
ΔP	-3.606487**	0	c	Stationary
ΔY	-3.942443***	0	c	Stationary
ΔIg	-4.520618***	1	c	Stationary
$\Delta Gbbn$	-3.640938***	0	c	Stationary
$\Delta Gbbs$	-5.019487***	0	c	Stationary
$\Delta M2$	-3.456143**	5	c	Stationary
$Fisb$	-3.3672*	0	c,t	Stationary

Table 3.5: Unit Root Test Results.

Election	Date	Corresponding Fiscal Year
General Elections 1977	January 7, March 7 and 10, 1977;	1976–77
Legislative Elections 1988	November 16, 1988	1987–88
General Elections 1990	October 29, 1990	1989–90
General Elections 1993	October 6, 1993	1992–93
General Elections 1997	February 3, 1997	1996–1997
General Elections 2002	October 10, 2002	2001–2002
General Elections 2008	February 18, 2008	2007–2008

Table 3.6: Election Dates.

3.5 Graphical Representation of the Data Series

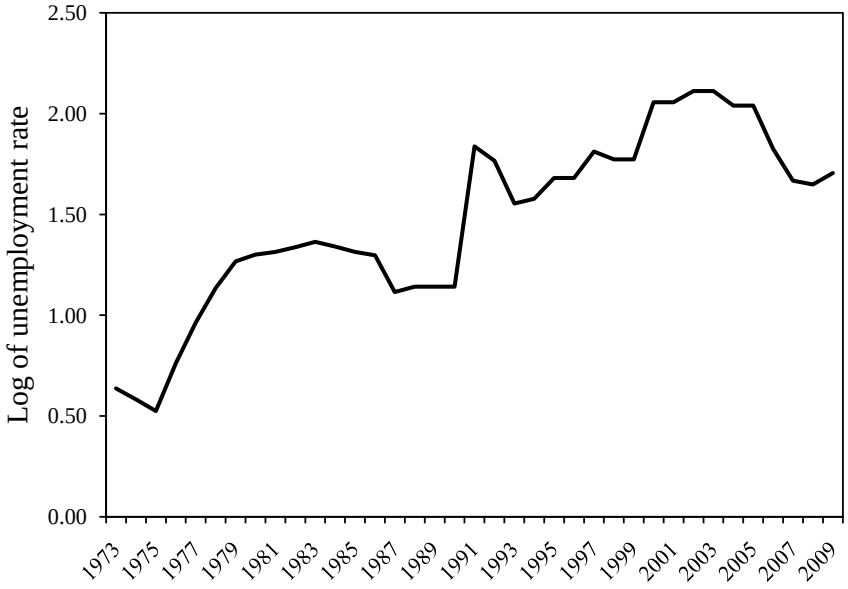


Figure 3.1: Log of Unemployment Rate 1973–2009.

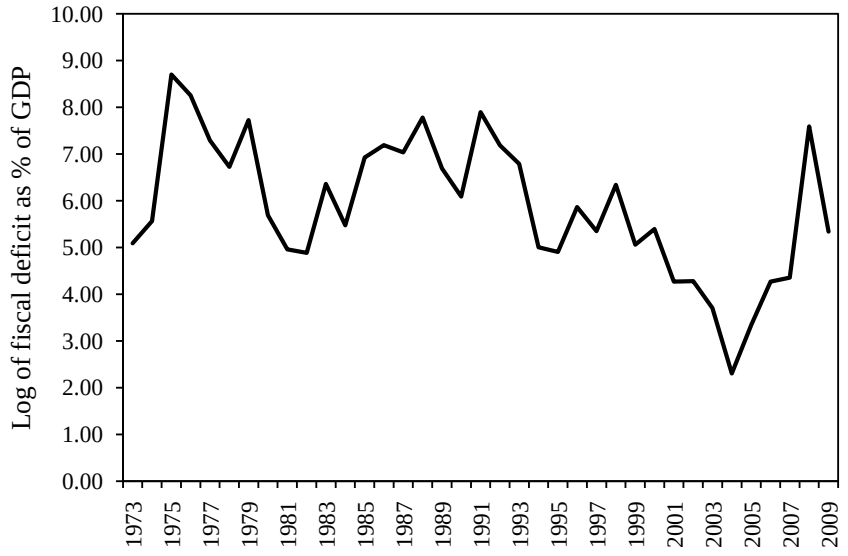


Figure 3.2: Log of Fiscal Deficit as % of GDP 1973–2009.

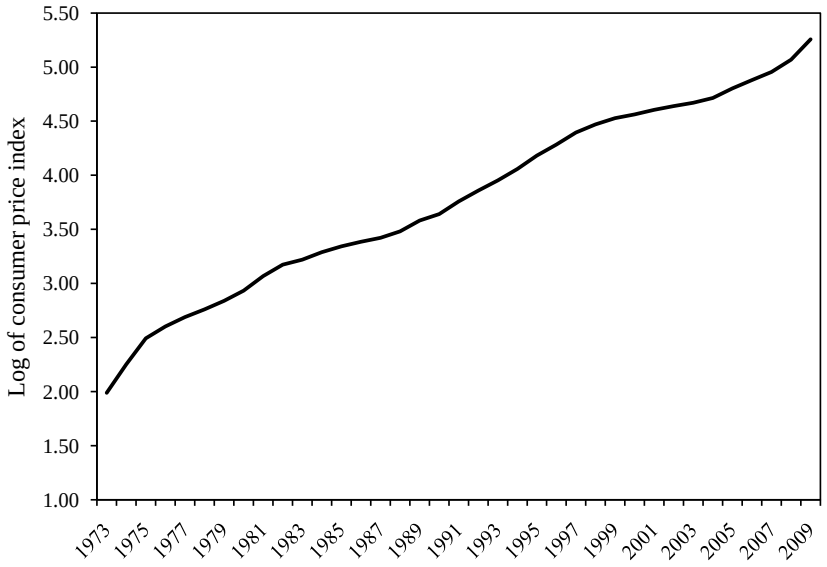


Figure 3.3: Log of Consumer Price Index 1973–2009.

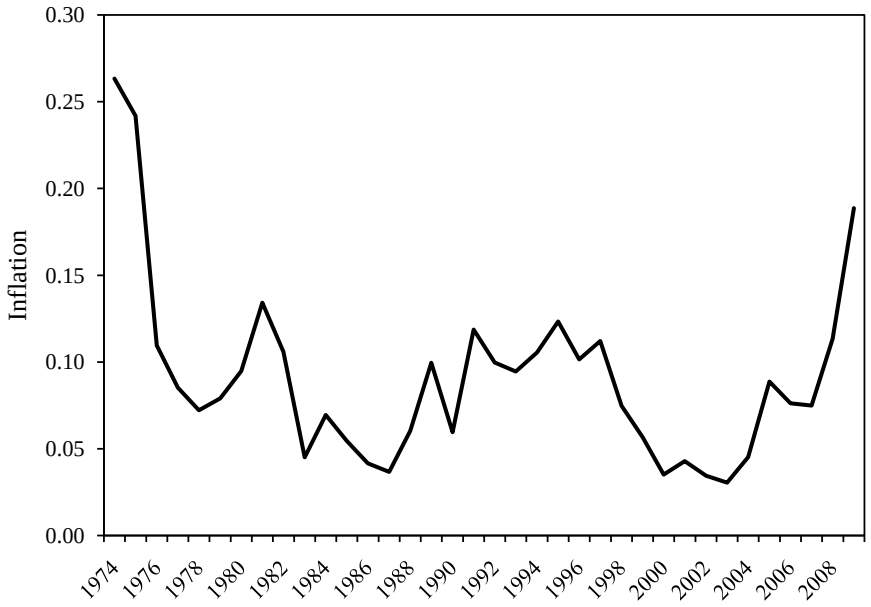


Figure 3.4: Inflation 1973–2009.

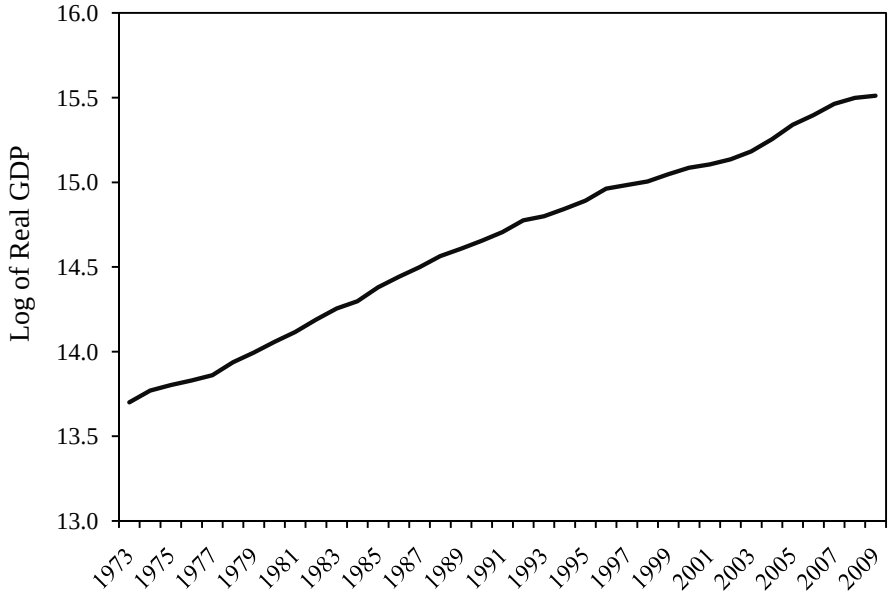


Figure 3.5: Log of Real GDP 1973–2009.

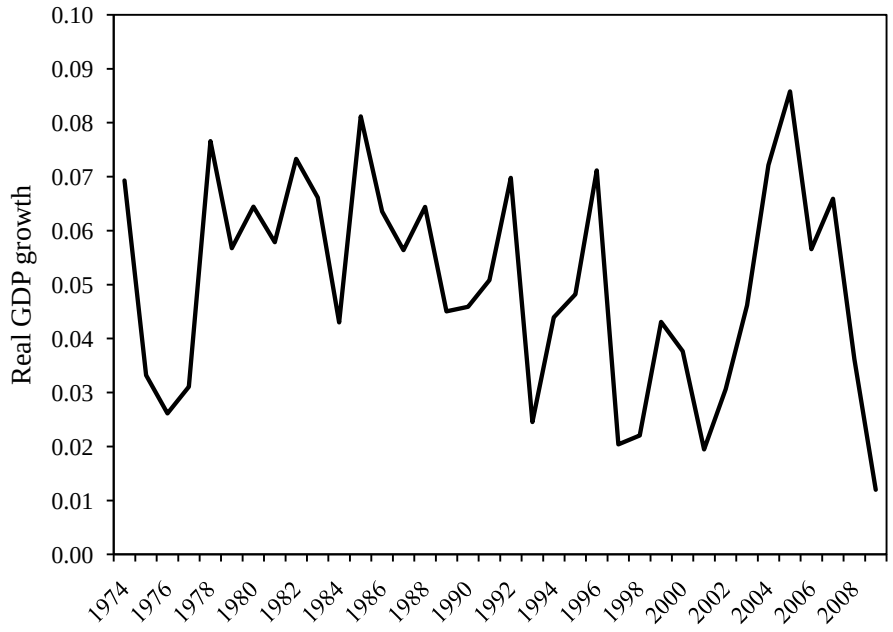


Figure 3.6: Real GDP Growth 1973–2009.

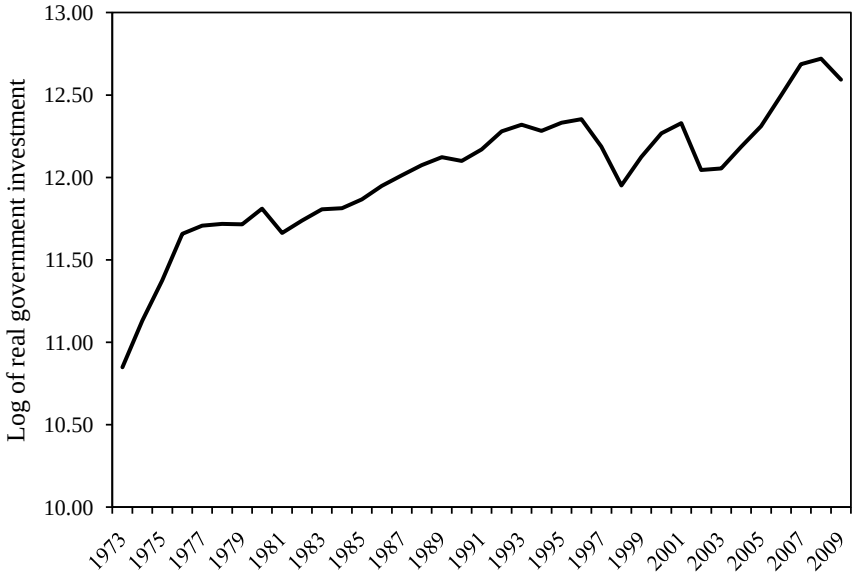


Figure 3.7: Log of Real Government Investment 1973–2009.

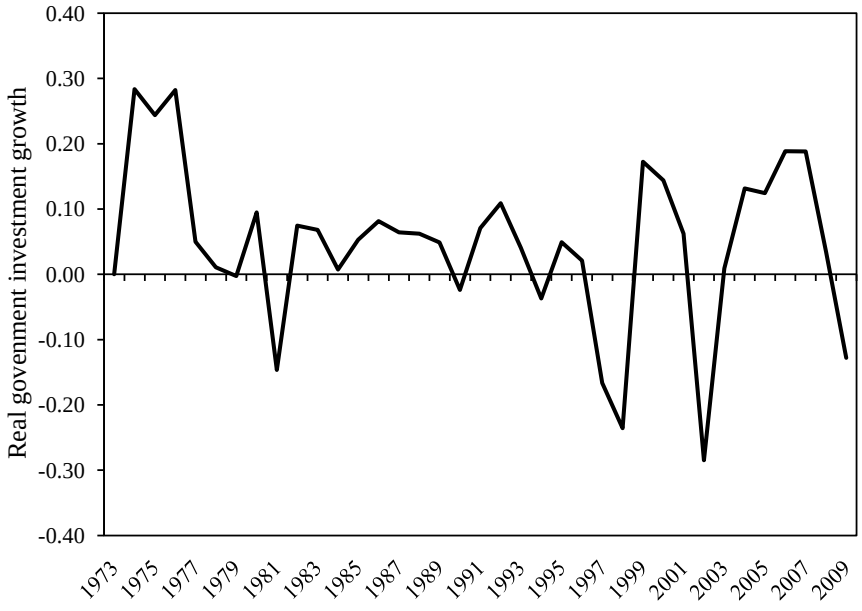


Figure 3.8: Real Government Investment Growth 1973–2009.

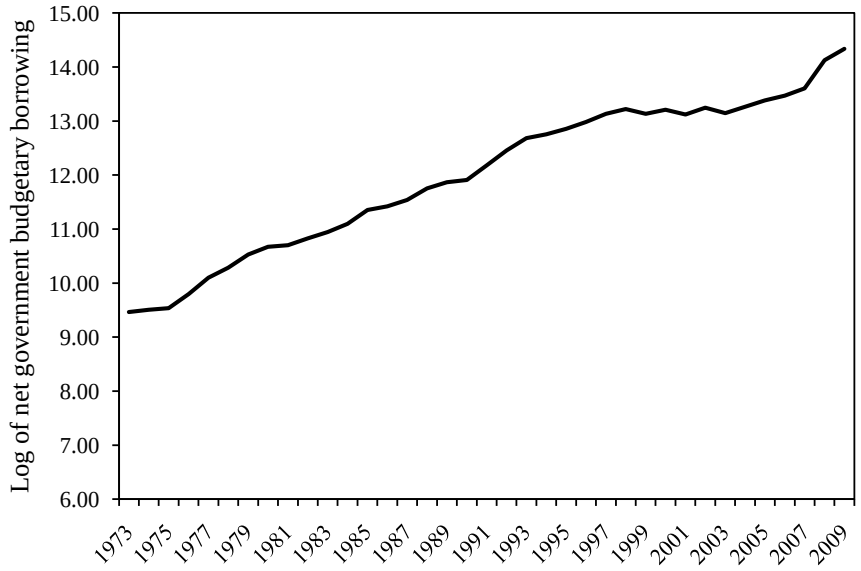


Figure 3.9: Log of Net Government Budgetary Borrowing 1973–2009.

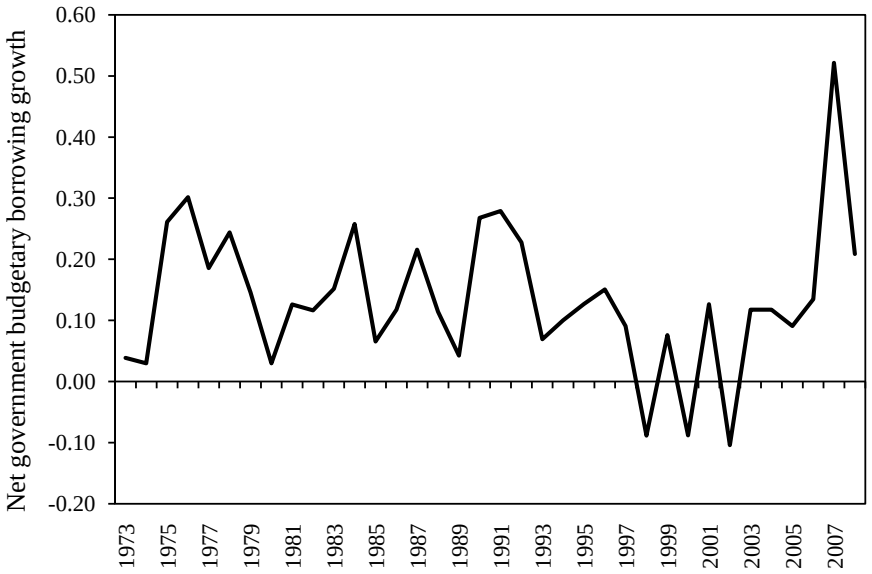


Figure 3.10: Net Government Budgetary Borrowing Growth 1973–2009.

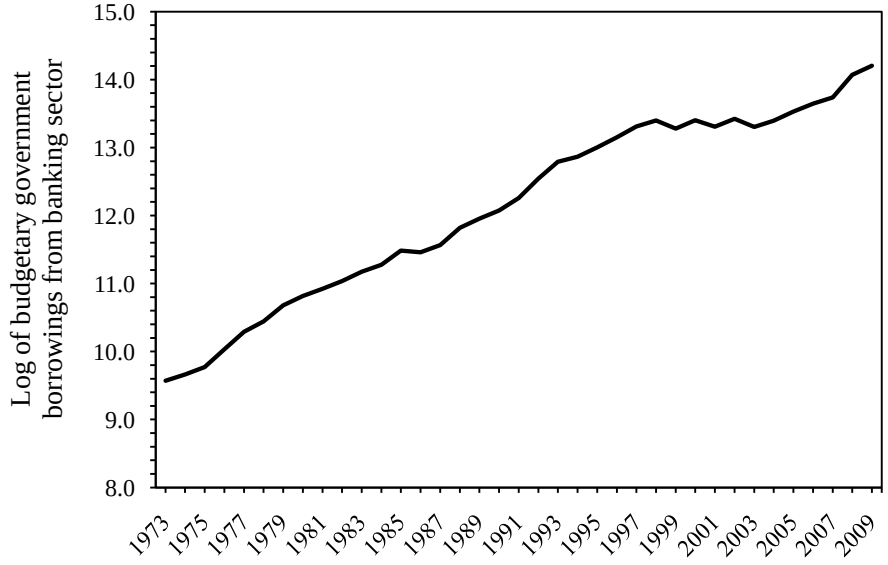


Figure 3.11: Log of Budgetary Government Borrowings from Banking Sector 1973–2009.

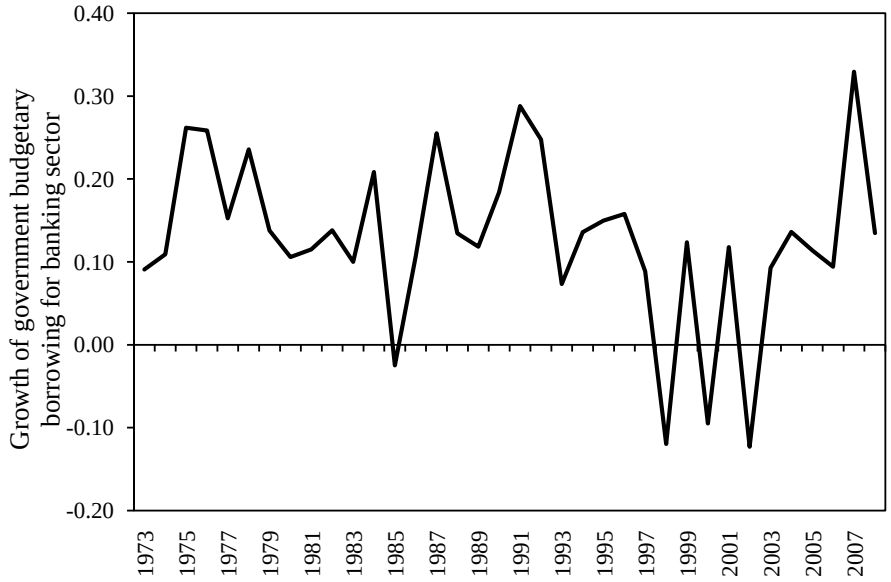


Figure 3.12: Growth of Government Budgetary Borrowing from Banking Sector 1973–2009.

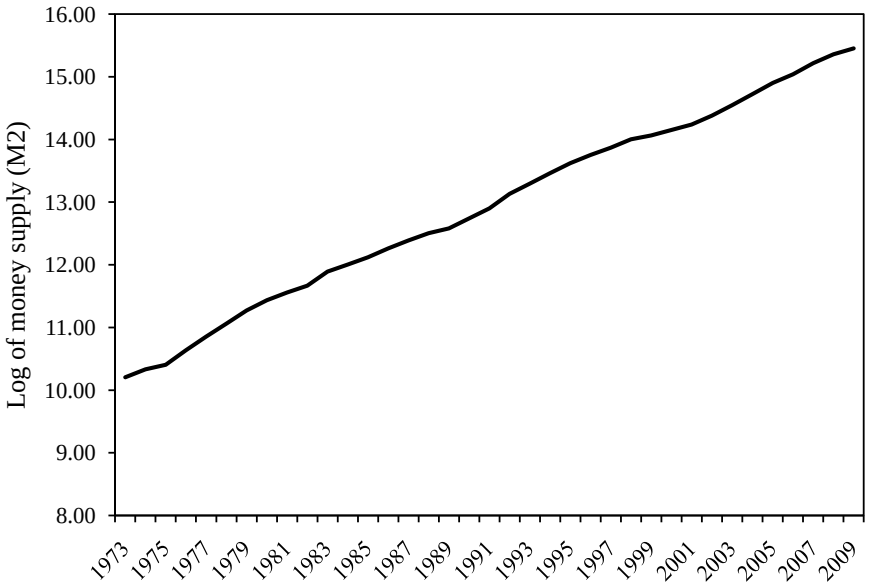


Figure 3.13: Log of Money Supply ($M2$)1973–2009.

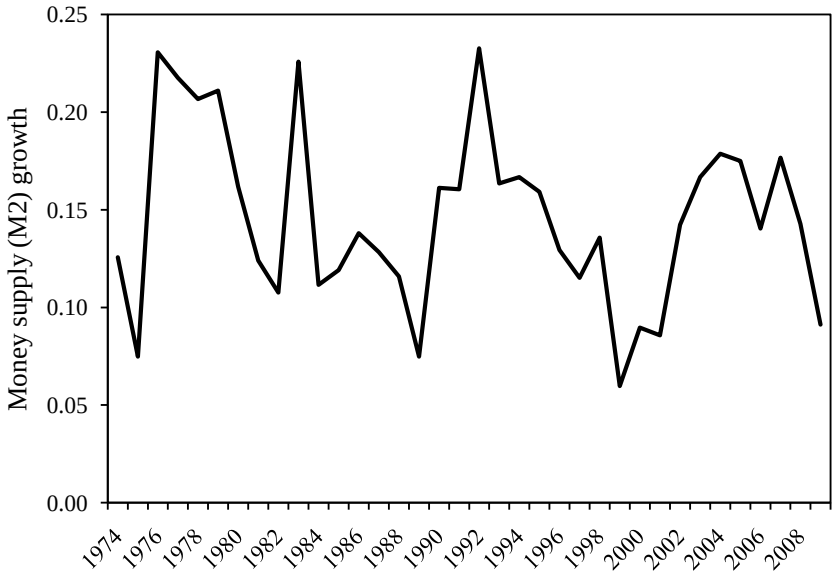


Figure 3.14: Money Supply ($M2$) Growth 1973–2009.

Chapter 4

Pakistan Central Bank Independence and Electoral Politics

> The only good central bank is one that can say No to politicians (The Economist, February 10, 1990).

4.1 Introduction

The opportunistic political cycle models, pioneered by Nordhaus (1975), hold that incumbent politicians regardless of their party affiliation, try to maximize their chances for reelection by creating a favorable macroeconomic environment in run-up to elections. For this opportunistic version of the political business cycle to be reasonably motivated, incumbent presidents/parties must believe that the electorate rewards the incumbent (or the incumbent's party) for favorable economic conditions prior to the election. Although the rationality for the electorate to do this has been questioned Stigler (1973), empirical evidence suggests that favorable economic conditions (i.e. rising income and/or low unemployment rates) in the run-up to elections do garner more votes for the incumbent president or his party [Abrams, (1980); Abrams and Butkiewicz (1995); Alesina (1993); Blomberg and Hess (2003); Erikson (1989); Fair (1978); Fair (1982) and Fair (1996)]. Thus, the empirical evidence provides a clear motive for a president or for the incumbent president's party to nurture an opportunistic political business cycle with the help of fiscal or monetary accommodation.

While the incumbent has a motive for encouraging an opportunistic political monetary cycle (PMC) little evidence of the use of monetary policy tools to support such a cycle has been uncovered for either the United States, OECD and other developing countries [Alesina and Roubini (1992); Allen and Mc.Crickard (1991); Beck (1987); Berger and Woitek (2001); Boschen and Weise (2003); Grier (1987); Grier (1989); Golden and Poterba (1980); Heckelman and Wood (2005); Leertouwer and Maier (2001) and Williams (1990)].

The empirical evidence on the use of monetary policy tools to support opportunistic PMCs have been further investigated under partisan affiliations and central bank independence context. Abrams and Iossifov (2006); Sieg (1997); Sieg (2006) and Ferris (2008) support the existence of PMCs only when the central bank chair and incumbent presidential party has partisan affiliations. In contrast Alpenda and Honig (2009), Hadri and Maloney (1998) and Maloney et.al. (2003) validate the existence of PMCs not because of the partisan affiliations but due to the lack of central bank independence as they are more vulnerable to the political pressure.

In this study our focus is on the existence of the PMCs keeping in view the Pakistan central bank independence during the period 1985–2010. We found that Pakistan central bank is not free from the political pressures as

its monetary policy is expansionary in run-up to election periods, consistent to the rising fiscal deficit trend and ever growing deficit financing by the banking sources during the same period.

The chapter proceeds as follows, section 2 characterizes the salient features of monetary policy in Pakistan. Section 3 provides a brief look on the political and economic independence of the State Bank of Pakistan (SBP) during the underlying period. Section 4 derives the central bank reactions function in view of its monetary policy and discusses the empirical results. The final section summarizes the findings and concludes.

4.2 State Bank Monetary Policy

Under the State Bank Act 1956, the State Bank of Pakistan, the central bank, was established to regulate the monetary and credit system in the economy to foster its growth with a view to secure monetary stability and fuller utilization of the country's productive resources [SBP ACT (1956)]. Furthermore, section 9A.1 of the State Bank Act 1956 elaborates the targets of monetary policy in Pakistan. It states that the target rates of GDP growth and inflation set by the federal government are the goals of monetary policy. Therefore the goals of the monetary policy in Pakistan are to achieve the target rates of growth and inflation that are set by the federal government.

SBP monetary policy comprises of market and non-market based instrument sets, such as direct credit control, interest rate (discount rate), T-bill auction rate, Open Market Operations (OMO) in the government securities and other eligible assets, statutory reserve requirement and statutory liquidity ratio etc. Under the direct instruments, the bank can prescribe credit ceiling, set credit/deposit ration, fix margin requirements, and control the rate of return. It can also direct the banks to restrict credit for certain purposes as well as to direct the flow of credit to priority sectors. Before 1990, State Bank of Pakistan used to conduct monetary and credit policies by applying mostly direct instruments. Since 1990–91, with the introduction of financial sector reforms, SBP has been focusing on the indirect measures to control the monetary policy (Arby,2004).

A number of changes have been made to move towards indirect and market based monetary management. As a major step in this direction, the prescription of credit ceilings, as an instrument of credit control, was

abolished in August 1992 and was replaced by a system which required the commercial banks to extend credit to the private sector within limits worked out on quarterly basis in relation to a credit/deposit ratio. Thereafter, the credit/deposit ratio was liberalized gradually. It was abolished completely w.e.f. October 1995. Now the monetary management is carried out through changes in the discount rate, T-bill auction rate, Open Market Operations and Reserve requirement.

Assuming the stability of money demand function, SBP targets the growth of money ($M2$) and accordingly made desired adjustments in its intermediate instruments e.g. discount rate, cash reserve and cash liquidity requirement on deposits etc. Similarly, annual credit plan is made considering the sectoral requirements of credit in the country[14]. It is implicitly assumed by the SBP that $M2$ and inflation are effectively controlled by the effective use of these monetary policy instruments. In this study our primary focus is on the SBP bank rate (discount rate) as the principle instrument of monetary policy in practice nowadays.

4.3 Pakistan Central Bank Independence

It has been witnessed that political monetary cycles depend upon the opportunistic politicians as well as on the political and economic independence of the country's central bank. Independent central banks are less likely to be involved in electorally motivated policies than central banks that are under the spell of the government[15]. The idea is that the insulating monetary policy from the politician's direct control and by appointing a conservative (i.e. inflation-averse) central banker, one can reduce inflation from a level that is too high because of the policy makers (opportunistic or partisan) fruitless attempt to reduce average unemployment. In other words, independent central banks are a means of achieving credibility in policy making and insulating the monetary policy from political pressures, thus reducing the average and variability of inflation, possibly at low cost in increased real fluctuations [Alesina et al. (1997); Hadri and Maloney (1998); Alesina and Summers (1993)]. In response to these findings, countries all over the

[14]Now the SBP has discontinued the exercise of the formulation of annual credit plans since year 2006.

[15]Waller (1989) and Fratianni et.al. (1997) present formal models of the benefit from central bank independence in partisan models. Eijffinger and Haan (1996) provides a survey of the political economy of central bank independence.

world have adopted independent central banks, or granted their pre-existing central banks a higher degree of independence.

There are two types of independence : economic independence and political independence. Economic independence means "the autonomy of the central bank in choosing the instruments of monetary policy", and political independence means "the freedom of the central bank to choose the goals of monetary policy [Grilli, Masciandaro and Tabellini (1991), p. 366-368].

Grilli, Masciandaro and Tabellini (1991) measured economic independence by two key institutional factors: the first one is the influence of the government in determining how much of the fiscal deficit will be monetized, and the second is the autonomy of the central bank in controlling the monetary instruments and banking supervision. On the other hand, political or goal independence is determined by three institutional factors: (1) the procedure for appointing members of the central bank governing body; (2) the legal relationship of the central bank with the government and (3) the formal legal responsibilities of the central bank (see details in Table 4.1; and Grilli, Masciandaro and Tabellini (1991)).

In Pakistan, the policy move towards the central bank independence has been started during the 1990s decade. In February 1994, a bill has been passed, accordingly the sole responsibility of the formulation of monetary policy has been given to SBP. More specifically, the Central Board (CB) of the SBP was given larger responsibility to regulate and supervise monetary and credit system keeping in view the national policy objectives of the government.

On January 1997, the State Bank of Pakistan was further amended to strengthen autonomy of the Bank. According to the amended section 9-A of the Act, the CB would in order to secure monetary stability and soundness of the financial system, formulate and monitor credit policy. In doing so the SBP would take into account the federal government targets for growth, inflation and expected changes in net foreign assets of the banking system and would ensure that monetary and credit policy is conducted in a manner which was consistent with these targets. The CB would also determine and enforce, in addition to the overall expansion of liquidity, the limit of credit to be extended by the SBP to the federal government, provincial government and other agencies of the federal and provincial governments for all purposes. It would also estimate the credit requirements by the private sector and would intimate the same to the Monetary and Fiscal Policies Co-ordination

Table 4.1: Pakistan Central Bank Independence.

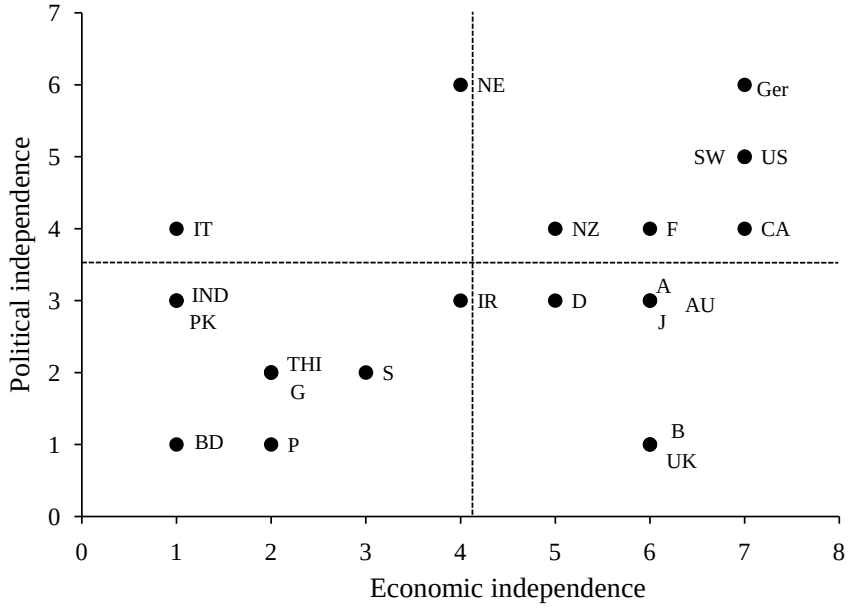
	A - Political Independence of State Bank	
	Appointments	
1	Governor is appointed by the Government	Yes
2	Governor is appointed for less than 5 years	Yes
3	All the Board is appointed by the government	Yes
4	Board is appointed for less than 5 years	Yes
	Relationship with government	
1	Mandatory participation of government representative in the board	Yes
2	Government approval of monetary policy formulation is required	No
	Constitution	
1	No statutory requirements that central bank pursues monetary stability amongst its goals	No
2	No legal provisions that strengthen the central bank's position in conflicts with the government are present	No

	B - Economic Independence of State Bank	
	Monetary financing of budget deficit	
1	Direct credit facility: non-automatic	No
2	Direct credit facility: market interest rate	No
3	Direct credit facility: temporary	No
4	Direct credit facility: limited amount	No
5	Central bank does not participate in primary market for public debt	No
	Monetary instruments	
1	Discount rate set by central bank	Yes
2	Banking supervision is not entrusted to the central bank or central bank alone	No

Source: SBP ACT (1956); (Arby,2004)

Board (MFPCB). More importantly, it would submit a quarterly report to the parliament on the state of the economy with special reference to the economic growth, money supply and credit, balance of payments and price developments.

According to the amended section 9-B, MFPCB would determine the extent of government borrowing from commercial banks taking into account the credit requirements of the private sector and liquidity expansion as determined by the CB. Similarly, in the amended Section 46-B, it has been prescribed that no governmental or quasi governmental body or agency shall issue any directive, directly or indirectly, to any banking company or any other financial institutions regulated by the SBP which is inconsistent with the policies, regulations and directives issued by the SBP pursuant to this Act, the Banking Companies Ordinance of 1962 or any other law in force. Moreover, the sole authority and responsibility to supervise and regulate the activities of nationalized commercial banks have been given to the State Bank of Pakistan.



A=Australia AU=Austria D=Denmark F=France
B=Belgium Ger= Germany G=Greece P=Portugal
CA=Canada IR=Ireland IT=Italy J=Japan
NE=Netherlands NZ=New Zealand S=Spain SW=Switzerland
IND=India US=United States PK=Pakistan THI=Thailand
BD=Bangladesh UK=United Kingdom

Figure 4.1: Political and Economic Independence of Central Banks.

To measure the SBP political and economic independence, we have followed the approach devised by Grilli, Masciandaro and Tabellini (1991). We

have updated and extended this analysis to some other developing countries such as Pakistan, Bangladesh, India and Thailand. The total number of "No" answers under the political independence head determines the ranking of central bank political independence i.e. "3" in case of Pakistan. While the total number of "Yes" answers under the economic independence head determine the central bank economic independence i.e. turned out to be "1" in the present scenario (see details in Table 4.1).

Figure 4.1 summarizes Tables 4.5 and 4.6 showing the overall degree of economic and political independence of the 22 countries including Pakistan. There are four groups of the countries. The upper-right portion of the diagram have the most independent central banks, those which enjoy both political and economic independence. The countries on the lower-left portion have the least independent central banks, both economically and politically[16]. The remaining two groups of countries are in between, with monetary institutions independent in only one of the two dimensions. Other politically unstable countries also have unsustainable debt policies (Austria, Belgium, Ireland, Italy and the Netherlands), but they have relatively independent central banks, at least on one dimension.

Despite various amendments and reforms initiated, it has been observed that SBP is still infant on the path of autonomy. The analysis of political and economic independence attributes presented in Table 4.1 suggest that Pakistan central bank lies among the least independent central banks. The main root cause is its consistently rising trend of fiscal deficit as percent of GDP during the period 1985–2010 (see Figure 4.2). This situation can be clearly visualized by comparing the target and actual values of deficit financing by the banking sources. It has been witnessed that most of the time Pakistan government has breached its borrowing limit that clearly indicates that SBP is under pressure to fulfill the government deficit gap (see Figure 4.3).[17]

[16]However now the economic independence of the countries in the Euro-zone is linked with the principle that is stated in in the Treaty establishing the European Community (article 108), which says that neither the ECB nor a national central bank shall seek or take instructions from Community institutions, from any government of a member state or from any other body. But still Greece, Portugal and Spain are considered to fall in this category.

[17]Except the period 1999–2003, during this period government has privatized some of the public owned institutions and received privatization proceeds, therefore have enough money and government also retired some of the borrowed money from the SBP. In addition, due to 9/11 event, Pakistan has accumulated foreign reserves in terms of remittances from abroad.

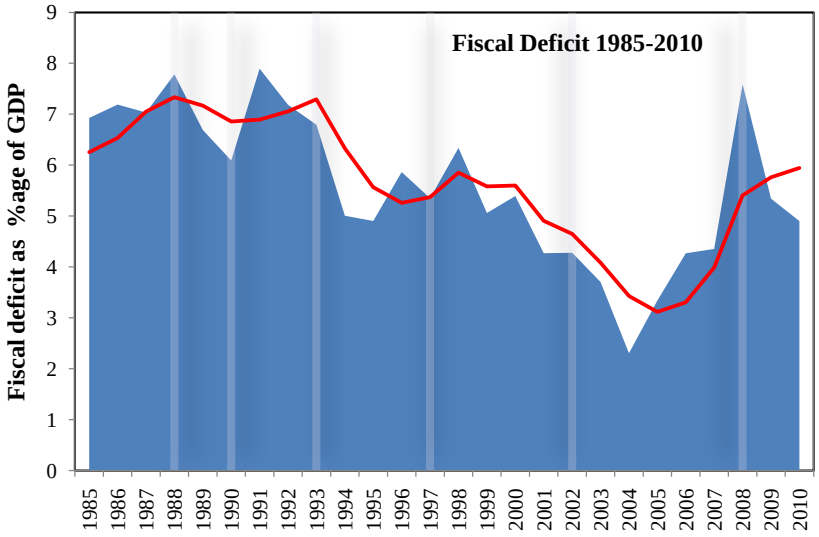


Figure 4.2: Pakistan Fiscal Deficit 1985–2010.

In view of the above discussed scenario, one may suspect the presence and existence of political monetary cycles in case of Pakistan. The empirical evidence supporting the presence of PMCs in multi-country or panel data set generalize the findings all over the countries, however less helpful in determining the nature and significance of it for some specific country. Therefore the single country analysis such like this is more recommendable and economically worthwhile.

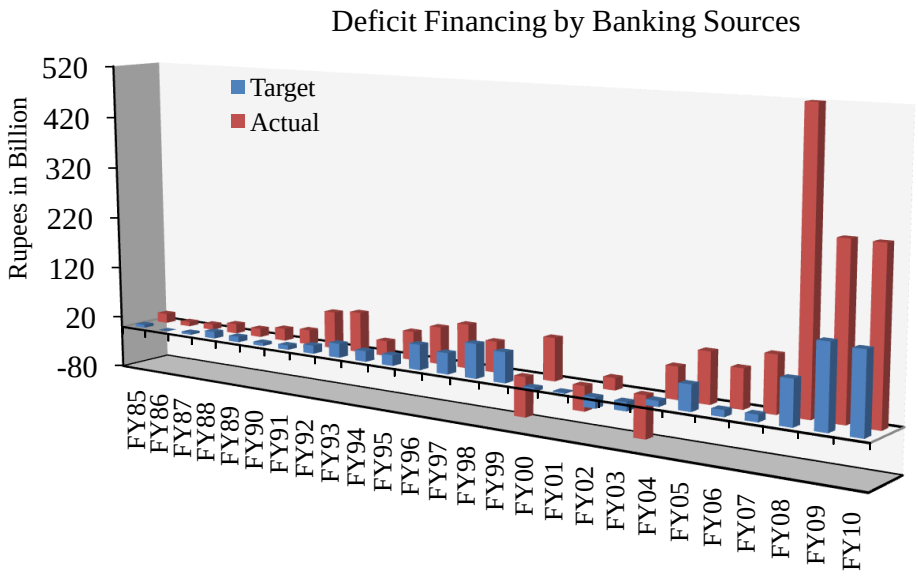


Figure 4.3: Pakistan Deficit Financing by Banking Sources 1985–2010.

4.4 Monetary Policy Reaction Functions and Empirical Results

4.4.1 Interest Rate Reaction Function and Elections

Following Abrams and Iossifov (2006) we estimate a Taylor type equation for the period 1985Q1–2010Q4 using OLS method[18]. Our dependent variable is the quarterly average for the discount rate ($DISR$). Explanatory variables initially include the year-to-year inflation rate (π) and the real GDP output gap ($RGDPGAP$). It is expected that the signs on inflation and real output gap are positive as both higher inflation rates and higher output gaps (i.e., real output above potential real GDP) are expected to encourage monetary tightening by the SBP (i.e., the setting of higher rates for $DISR$). The $DISR$ lagged one quarter, $DISR(-1)$, enters the models as a RHS variable to allow interest-rate smoothing behavior by the central bank. It should be noted that interest rate smoothing may in itself be apolitical cause of the monetary cycle as stated by Laney and Willet (1983) and Ferris (2008).

$$DISR_t = \alpha + \beta\pi_t + \gamma RGDPGAP_t + \phi DISR_{t-1} + \delta polD_i + \vartheta_t \qquad (4.1)$$

The findings for the Equation (4.1) specification appear in model 1, Table 4.2. Estimated results show that whenever there is rise in inflation and real GDP output gap, SBP tightens the monetary policy by increasing the interest rate. Despite its simplicity, model 2 in Table 4.2, explains 94 percent of the variation in $DISR$. $DISR(-1)$ proved to be highly significant, consistent with the widely acknowledged interest-rate smoothing behavior by the SBP. We used model 2 as the baseline OLS model for the preliminary testing of propositions concerning the existence of a PMC.

All the data series have been extracted from the International Financial Statistics (IFS) electronic data source.

1. Discount rate ($DISR$) is the quarterly discount rate series extracted from the IFS data source.

[18]For the interest rate as the linear function of inflation and real output gap as specified by the Taylor ($DISR = \beta\pi_t + \gamma RGDPGAP_t$), OLS test results are super consistent as the residuals obtained from the estimated regression equation are stationary (see in Figure 4.8)

2. The inflation rate is calculated as the growth rate of quarterly averages of monthly published data on CPI (annualized, in percent):

$$\pi_t = 4 \times 100 \times (\ln CPI_t - \ln CPI_{t-1}),$$

where CPI is the Consumer Price Index extracted from the electronic data source of IFS.

3. The output gap is calculated as

$$RGDPGAP = 4 \times 100 \times [\ln(mpi_t) - hptrend(\ln(mpi_t)],$$

where the mpi is the quarterly manufacturing production index and $hptrend(lnmpi)$ is the potential manufacturing production index, calculated by hp_filter method.

4. The GDP growth rate has been calculated as

$$GDPgrowth = [\ln(mpi_t - \ln(mpi_{t-1})] \times 4 \times 100.$$

5. D_1 is defined as equal to '1' in the election quarter and '0' otherwise, and D_2 defined as equal to '1' in the election quarter and one quarter prior to election, and '0' otherwise. Similarly D_{21} is equal to '1' in the pre-election quarter and '0' otherwise.

If the SBP is under government pressure to improve economic conditions in the run-up to elections, we should be able to find evidence that the discount rate deviates from the Taylor's rule during some period prior or during the election quarters. Since a reduction in the $DISR$ would stimulate the economy, we seek to test whether or not the $DISR$ is lower in some period prior or during the election period. To this end, we construct some dummy variables: D_i that takes on a value of '1' in ith quarters prior to or during the election occurs, and '0' otherwise. A negative and significant coefficient on D_i would support the existence of PMC hypothesis.

Model 3 and 4 in Table 4.2 adds the political dummies to the baseline monetary policy rule. These dummies are found to be negative and significant, showing that SBP eases the monetary policy by reducing the interest

Model/Explanatory Variables	(1)	(2)	(3)	(4)
C	0.02			
	(0.06)			
INF	0.06	0.06	0.06	0.065
	(4.27)	(5.24)	(4.50)	(4.47)
$RGDPGAP$	0.004	0.004	0.005	0.005
	(2.92)	(2.62)	(3.19)	(2.94)
$DISR(-1)$	0.96	0.96	0.96	0.96
	(85.63)	(87.15)	(86.42)	(85.86)
D_1			-0.57	
			(-1.68)	
D_2				-0.32
				(-1.28)
R-squared	0.94	0.94	0.94	0.94
Adjusted R-squared	0.94	0.94	0.94	0.94
Serial Correlation LM test Prob.(χ^2)	0.56	0.55	0.52	0.58
Durbin-Watson stat.	1.91	1.96	1.88	1.89

Table 4.2: Determinants of the SBP Discount Rate, $DISR$, 1985Q1–2010Q4.

rates by 57 and 32 percentage points in the election quarter and two quarters proceeding to election respectively. The timing of the dummy variable confirms the assumption commonly made in the literature, that voters decide on whether to vote for the candidate of the party of the incumbent president, based on the state of the economy in the last quarter prior to the election quarter [Faust and Irons (1999)].

If we compare our results with the Abrams and Iossifov (2006) study, we found that SBP reaction to inflation is about one half in magnitude and reaction to $RGDPGAP$ is rather more weak than estimated in Fed's reaction function. These results are practically justified as SBP being the central bank of a developing country and lagged behind in tightening of the monetary policy than Fed. Similarly the lagged interest rate coefficient magnitudes turned out to be higher than in the case of Fed reaction function.

4.4.2 Modified Interest Rate Reaction Function

The estimated reaction function states that SBP tightens its monetary policy whenever the real output gap and inflation rises, however the coefficient magnitude of the output gap is rather small. The reason behind this may be that the SBP conducts its monetary policy by focusing on the inflation

Model/Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)
C	0.07					
	(0.23)					
INF	0.05	0.05	0.06	0.06	0.06	0.06
	(3.52)	(3.81)	(4.07)	(4.18)	(4.34)	(4.37)
GDP growth	0.002	0.002	0.003	0.003		
	(1.65)	(1.72)	(2.14)	(2.06)		
$RGDPGAP$					0.005	0.005
					(3.00)	(3.05)
$DISR(-1)$	0.96	0.96	0.96	0.96	0.96	0.96
	(37.3)	(83.4)	(84.1)	(83.8)	(85.92)	85.59)
D_1			-0.61			
			(-1.69)			
D_2				-0.44		
				(-1.66)		
D_m					-0.63	
					(-1.35)	
D_c						-0.46
						(-0.96)
R-squared	0.93	0.93	0.94	0.94	0.94	0.94
Adjusted R-squared	0.93	0.93	0.93	0.93	0.94	0.94
Serial Correlation						
LM test Prob.(χ^2)	0.42	0.42	0.38	0.48	0.69	0.38
Durbin-Watson stat	1.84	1.86	1.82	1.84	1.98	1.83

Table 4.3: Determinants of the SBP Discount Rate, $DISR$, 1985Q1–2010Q4.

and GDP growth targets announced by the federal government. Therefore, the estimated (Taylor type) interest rate reaction function should consist of GDP growth instead of real output gap. Here we have modified our interest reaction function as specified below.

$$DISR_t = \alpha + \beta\pi_t + \gamma GDPgrowth_t + \phi DISR_{t-1} + \delta polD_i + \vartheta_t \qquad (4.2)$$

The results obtained from Equation 4.2 appears in Table 4.3. It has been seen that whenever there is rise in inflation and real GDP growth, SBP reacts by increasing the interest rate. Lagged interest rate coefficient shows the similar interest rate smoothing behavior as in the previous case. The overall model explains 94 percent variations in the discount rate, however

the main part comes from the lagged interest rate. Model. 2 in Table 4.3 has been used as the baseline OLS model to test the PMCs hypothesis. The political dummies are found to be negative and significant, showing the result that SBP eases the monetary policy by reducing the interest rate in the election quarter and two quarters preceding election (by 61 and 44 percentage points respectively). The negative and significant coefficients on political dummies support the existence of PMC hypothesis.

To test the model robustness we have also estimated the models by using the GMM (Generalized Method of Moments). All variables are found to be the same in terms of coefficient values and significance, showing the robustness of the results (see Table 4.4). We have also included the two lags of explanatory and dependent variables but found to be insignificant. Moreover, their exclusion does not cause any change in coefficients magnitude and significance of the remaining explanatory variables in the models.

Model/Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)
INF	0.06	0.06	0.06	0.05	0.06	0.06
	(5.10)	(5.05)	(5.03)	(4.28)	(4.39)	(4.60)
$RGDPGAP$	0.005	0.005	0.005			
	(2.69)	(2.74)	(2.72)			
GDP growth				0.002	0.003	0.003
				(1.91)	(2.33)	(2.43)
$DISR(-1)$	0.96	0.96	0.96	0.96	0.96	0.96
	(88.9)	(90.5)	(89.2)	(81.5)	(83.3)	(83.9)
D_1		-0.58			-0.61	
		(-2.44)			(-2.51)	
D_2			-0.30			-0.42
			(-0.98)			(-1.30)
R-squared	0.94	0.94	0.94	0.94	0.94	0.94
Adjusted R-squared	0.94	0.94	0.94	0.93	0.93	0.93
Durbin-Watson stat	1.91	1.88	1.90	1.86	1.82	1.84
J-Statistic	0.00	0.00	0.00	0.00	0.00	0.00

Table 4.4: Determinants of the SBP Discount Rate, $DISR$, 1985Q1–2010Q4 (GMM Estimates).

These evidences are consistent to the findings as described by Alpenda and Honig (2007), as the ranking given to the Pakistan central bank is 44 among the sample of 55 countries and 86th among the sample of 115 countries, in terms of independence depending upon the existence of political monetary business cycles. The higher the ranking, the more central bank

is prone to political pressure to induce the electoral monetary cycles [see details in Alpenda and Honig (2007)].

4.4.3 Tests for Military and Civilian Government Specific PMCs

During the study period 1985–2010, six elections were held. The country was ruled by two military and three civilian governments. During the election terms 1989, 2002 and 2008, the incumbent president came through the military government. During 1990, 1993, and 1997 election terms the president is the part of the civilian government. In both cases, the authority enjoyed by the presidents may be different. This leads to the question "Are military and civilian governments are equally responsible for creating the PMCs in case of Pakistan? To test this hypothesis, Table 4.3, model 6 and 7 substitutes the political dummies D_1 and D_2 by the separate political dummy variables i.e. D_m dummy for military government and D_c dummy for civilian governments. Here D_m is equal to 1 for the election 1988, 2002 and 2008, and 0 otherwise. While the D_c is equal to 1 for the election 1990, 1993, and 1997 and 1 otherwise. The estimated results explain that both military and civilian government dummies are found to be negative showing the same opportunistic political behavior but statistically insignificant (see Table 4.3; Model.5 and 6). It may be due to the limited number of values (election terms) under both governments. Blais and Nadeau (1992) attributed such type of non-existence of electoral cycles to the scant number of time series observations available, where the coefficients on the key variables are often of the predicted sign, although they lack of statistical significance.

4.5 Conclusion

Despite various reforms regarding the central bank independence undertaken during the 1990s decade, it has been witnessed that Pakistan central bank (SBP) is not among the list of political and economically independent central banks of the world. Acknowledging this fact, central bank interest rate reaction (Taylor Type) function with some political variables has been estimated to investigate the existence of PMCs in Pakistan during the period 1985Q1–2010Q4. Although the existence of Taylor type rule is

controversial in Pakistan, the estimated interest rate reaction function follows the conventional wisdom and demonstrates the tightening of monetary policy by SBP whenever the output gap/GDP growth and inflation rises in the economy. The pre-election dummy variables found to be negative and significant, that support the existence of PMCs during the underlying period. Our results are in line with the findings of Batool and Sieg (2009b) and Alpenda and Honig (2009) who demonstrate the existence of electoral cycles in monetary policy and PMCs existence attributed to developing countries central bank non-independence.

Table 4.5: Political Independence of Central Banks.

	Appointments				Relationship with government		Constitution		Index of political independence
Countries	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Australia		*					*	*	3
Austria						*	*	*	3
Belgium				*					1
Canada	*	*					*	*	4
Denmark		*				*	*		3
France		*		*		*	*		4
Germany		*		*	*	*	*	*	6
Greece			*					*	2
Ireland		*				*	*		3
Italy	*	*	*		*				4
Japan						*	*	*	3
Netherlands		*		*	*	*	*	*	6
New Zealand					*	*	*	*	4
Portugal					*				1
Spain				*	*				2
Switzerland		*			*	*	*	*	5
UK					*				1
US				*	*	*	*	*	5
Pakistan						*	*	*	3
India						*	*	*	3
Bangladesh							*		1
Thailand						*	*		2

Notes: (1) Governor not appointed by the government; (2) Governor appointed for $>$ 5 years; (3) All the Board not appointed by the government; (4) Board appointed for $>$ 5 years; (5) No mandatory participation of government representative in the Board; (6) No government approval of monetary policy formulation is required; (7) Statutory requirements that central bank pursues monetary stability among its goals; (8) Legal provisions that strengthen the central bank's position in conflicts with the government are present; (9) Overall index of political independence, constructed as the sum of the asterisks in each row. *Source*: Grilli, Masciandaro and Tabellini (1991); Countries National Legislations; Table 4.1.

Table 4.6: Economic Independence of Central Banks.

	Monetary financing of budget deficit					Monetary instruments		Index of economic independence
Countries	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Australia	*	*	*	*	*	*		6
Austria			*	*	*	*	**	6
Belgium		*		*	*	*	**	6
Canada	*	*	*	*		*	**	7
Denmark		*			*	*	**	5
France				*	*	*	**	5
Germany	*	*	*	*	*	*	*	7
Greece				*		*		2
Ireland		*	*	*		*		4
Italy				*				1
Japan	*		*		*	*	*	5
Netherlands			*	*	*	*		4
New Zealand	*	*	*	*		*		5
Portugal				*		*		2
Spain			*	*			*	3
Switzerland		*	*	*	*	*	**	7
UK	*	*	*	*		*	*	6
US	*	*	*	*	*	*	*	7
Pakistan						*		1
India						*		1
Bangladesh						*		1
Thailand						*		1

Notes:(1) Direct credit facility: not automatic; (2) Direct credit facility: market interest rate; (3) Direct credit facility: temporary; (4)Direct credit facility: limited amount; (5) Central bank does not participate in primary market for public debt; (6)Discount rate set by the central bank;(7)banking supervision not entrusted to the central bank(**) or not entrusted the central bank alone(*); Overall index of economic independence (being the sum of the asterisks in column 1-7). *Source*: Grilli, Masciandaro and Tabellini (1991); Countries National Legislations; Table 4.1.

Variables	Deterministic trend	Lags	ADF test Value	Decision
$DISR$	c	0	-1.428600	I(1)
Δ $DISR$	none	0	-8.469777	I(0)
Real Output Gap	none	5	-3.770167	I(0)
Inflation	c	2	-3.364469	I(0)
GDP Growth	c	4	-3.997588	I(0)
Residuals (Taylor-rule equation)	*none*	2	-2.564413	I(0)
Political Dummies	none	0	-10.14889	I(0)

Table 4.7: Statistical Properties of the Variables: Unit Root Test Results.

4.6 Graphical Representation of the Data Series

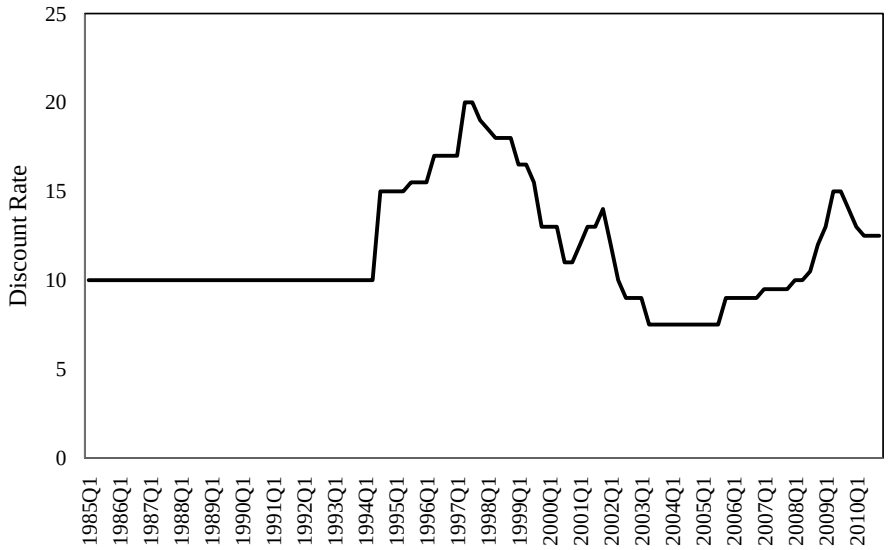


Figure 4.4: SBP Discount Rate 1985-2010.

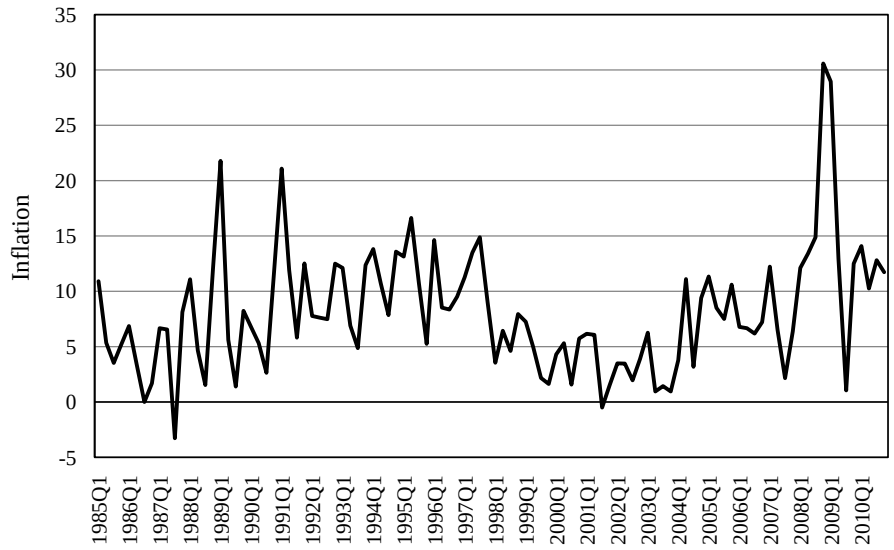


Figure 4.5: Inflation 1985-2010.

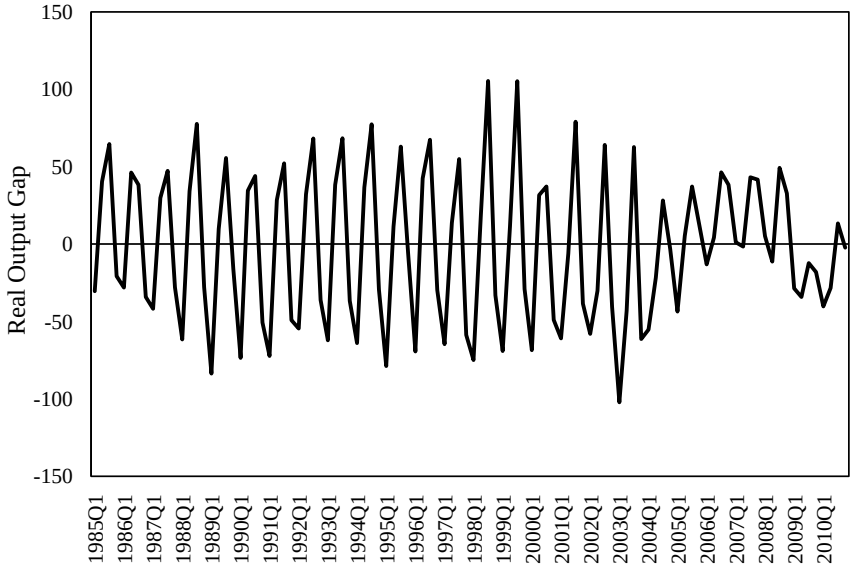


Figure 4.6: Real Output Gap 1985-2010.

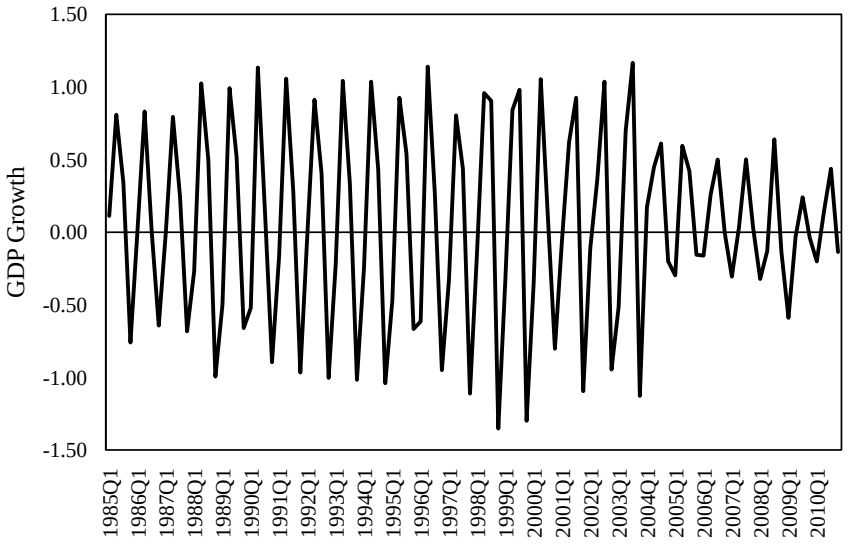


Figure 4.7: GDP Growth 1985-2010.

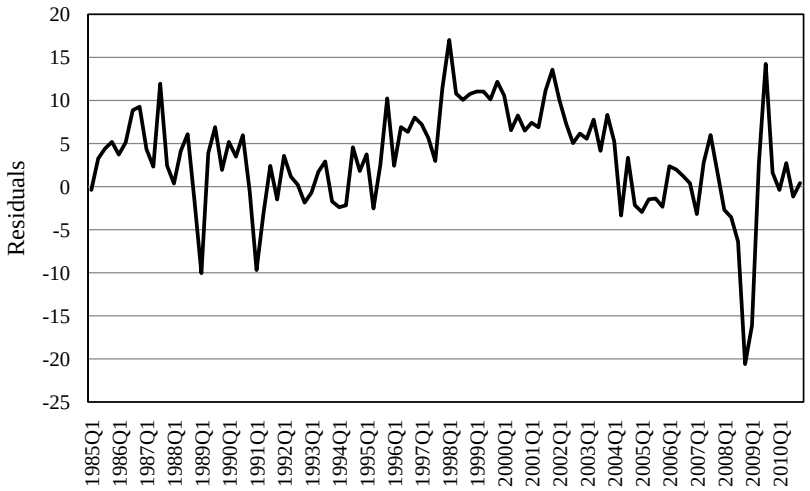


Figure 4.8: OLS Estimation based residuals from (Taylor Rule) Equation.

Chapter 5

Conclusions and Policy Implications

This dissertation comprises of three distinct empirical research case studies undertaken on economic voting and political business cycle theories. The first study "Bread and the Attrition of Power: Economic Events and German Election Results" has been carried out to study the voting behavior of German voters during the post-war period 1953–2005. While the latter two studies "Pakistan, Politics and Political Business Cycles" and "Pakistan Central Bank Independence and Electoral Politics" have been conducted to test the existence of the electoral politics and its implications on the Pakistan economy. Although all three studies are based on the concept of economic voting and its implications, however each of these has captured a different aspects of two different economies of Germany and Pakistan.

The first study has investigated the German's voting behavior during 1953–2005. Results show that German voters are well-informed of prevailing economic conditions and they vote according to the national economic situation during the whole election terms. We found that incumbents (coalition of parties) that offer average growth during the term earns a vote share of 47.96 percent and each additional percentage point of growth adds 1.98 percentage points to votes. Our results are in line with the Hibbs (2000, 2008) "Bread and Peace model" results for United States presidential elections. However, the effect on the vote share is smaller in case of Germany than in the United States, arguably because the political systems are very different or economic variables are not as important in Germany as in case of United States. Therefore, the motivation to induce the political business cycles in run-up to elections is very low, and politicians have to be

concerned about the stable economic conditions during the whole election term. In this scenario, one can understand the growing unpopularity of the present German chancellor Angela Merkel's Chirtian Democrates due to economic crises started in 2009. Angela Merkel's party and its Bavarian sister (Christian Social Union) party have lost elections in Hamburg and in the state of Baden-Wüerttemberg this year (2011) and face low approval ratings during the last two years (2009-10). According to our results it is the average growth of real disposable income of a German during the term that fell sharply in 2009 due to economic crises and now growing at low pace since then, actually dragging on Ms. Merkels popularity. Therefore if the German government some how manage to deliver strong real per capita disposable income growth, then it is likely that Ms. Merkel would be significantly more popular and have more political latitude to sign Germany up for bailouts. Another important result that has been witnessed in the elections of 1961, 1994 and 1998 is the attrition of power effect. Accordingly, if German chancellor is going to sought re-election thrice or more times then his coalition parties vote share will be reduced due to the attrition of power effect.

The second study "Pakistan, Politics and Political Business Cycles" has been conducted to test the existence and identification of Political Business Cycles in Pakistan Economy. This study is economically worthwhile in terms of findings and useful policy implications. We found clear opportunistic cycles in unemployment and inflation during election window, as a result of politically motivated employment schemes and artificially regulated prices. These expansionary policies has caused an increase in the budget deficit that is accommodated by the net government budgetary borrowings and borrowing from the banking sector resulting in monetary expansion and inflationary pressure in the economy simultaneously. In contrast, these expansionary policies are unable to have a real positive effect on GDP and investment growth during the same period, may be attributed to the resultant inefficient allocation of resources. The root cause behind the existence of such substantial electorally motivated policies in a developing economy such as Pakistan is the politicians short-sighted vision, weak accountability system, voters's unawareness and inability to understand the interplay of these types of opportunistic games. In order to control and overcome these distortions there is a need to promote and encourage the knowledge-based economy that would led to set-up awareness among the voters and develop

proper accountability system via voting behavior.

The third study of this dissertation "Electoral Politics and Central Bank Independence" has addressed another important aspect i.e. the miss-use of the country's monetary policy by the opportunistic politicians in order to accomplish their short-term objectives. The monetary policy is usually used due to its immediate effect and relatively easy access in comparison to other financing options, however it may have severe implications afterwards in terms of inflationary pressures, debt crises and sustainability issues. Considering this problem seriously, significant reforms have been initiated to strengthen and set-up the independent monetary institutions all over the world. Also, in Pakistan the policy move towards the central bank independence has been started in the 1990s decade. Although it has been witnessed that Pakistan Central bank (SBP) is still among the category of least independent central banks, thus having the considerable probability of political manipulation to exist during the election periods. In view of this situation, we have estimated a central bank interest rate reaction (Taylor Type) function with some political variables to investigate the existence of PMCs in Pakistan during the period 1985Q1–2010Q4. The estimated interest rate reaction function follows the conventional wisdom and demonstrates the tightening of monetary policy by SBP whenever the output gap/GDP growth and inflation rises in the economy. The pre-election dummy variables are found to be negative and significant, that support the existence of electoral politics i.e. PMCs during the underlying period. These results has conformity with the findings of Batool and Sieg (2009b) and Alpenda and Honig (2009) who demonstrated the existence of electoral cycles in monetary policy and PMCs existence attributed to the non-independence of the central banks of developing countries.

Comparing these three studies we found that Germany and Pakistan are two different economies in terms of voters behavior, political system, stage of economic and political development, institutions structures and therefore having different resultant implications of economic voting and political business cycles. German voters are well-informed, more democratic and matured. Like Americans, their voting decision is based on the economic performance demonstrated by the incumbents during the whole election term. Moreover, German politicians are also aware of the fact that voters do respond by voting against them if they found to be involved in such types of opportunistic games. Therefore they have less motivations to induce the

political business cycles in run-up to elections and more concerned about the stable economic situation during the whole election term. In contrast, Pakistan is a developing country where voters are naive and institutions (e.g central banks) are less powerful than government. These conditions put the politicians at great advantage to make use of the electoral politics and to induce political business cycles in the run-up to elections. In my view, important factor behind these two extremes is the different stages of political and economic development. Economic development and political development are two interdependent things that comes together. Germany is a developed knowledge based-economy, strong political and economic institutions set-ups and people are well-informed, hence having the better ability in making economic and political decisions. Therefore the person (either voter or incumbent) who make wrong choice is out of the game. While Pakistan is at the developing stage in terms of economics and politics as well, thus provide a room for political manipulation to exist. Therefore in Pakistan we have witnessed various employment schemes, ad-hoc salary reliefs, subsidies, crop-support prices and regulatory control on energy prices to control inflation artificially till the election period are the common examples of political manipulation before election. Another important factor that contributes to the existence of political business cycles in a developing country such as Pakistan is its weak institutional set-ups. For example, the monetary authority, German Bundas Bank (before currency union), and now the European Central Bank is one of the leading independent central banks that had tolerated successfully the immense pressure from government and other member countries and made possible the functioning of single currency in Euro-Zone[19]. On the other hand, Pakistan central bank is still infant on the path of independence and resultantly its management and monetary policies have been victimized many a times by the electoral politics. In view of these hard underlying facts, one can fully understand the recent resignation of Pakistan's central bank governor (Dr. Shahid Kardar) from his duties before the completion of his term. It provides a clear evidence of the central bank's inability to tolerate the political pressure from the government authorities during the present government tenure. In short, the lesson drawn from these research studies is that there is a need to develop and set-up the knowledge-based economy, proper accountabil-

[19]However; presently there is a controversy going on Greece and ECB role, but ECB is still one of the independent central bank.

ity system, strong and independent institutional set-ups to foster the real economic and political development in a country such as Pakistan.

Bibliography

Abrams, B. A. (1980). The influence of state-level economic conditions on presidential elections. Public Choice, 35, 623–631.

Abramowitz, A. I. (1988). An improved model for predicting presidential election outcomes. Political Science and Politics, 21, 843–847.

Abrams, B. A., and Butkiewicz, J. B. (1995). The influence of state-level economic conditions on the 1992 presidential election. Public Choice, 85, 1–10.

Abramowitz, A. I. (2001). The time for change model and the 2000 election. American Politics Quarterly, 29, 279–282.

Abrams, B.A. and Issofov, P. (2006). Does the Fed Contribute to a Political Business Cycle? Public Choice, 129, 249–262.

Alesina, A. (1987). Macroeconomic Policy in a Two-Party System as Repeated Game. Quarterly Journal of Economics, 102, 651–78.

Alesina, Alberto F., Gerald D. Cohen and Roubini, Nouriel. (1992). Macroeconomic Policy and Elections in OECD Democacries. Economics and Politics, 4, 1–30.

Alesina, Alberto F., Gerald D. Cohen and Roubini, Nouriel . (1993). Electoral Business Cycles in Industrial Democracies. European Journal of Political Economy, 9, 1–23.

Alesina, A. and Roubini, N. (1992). Political Cycles in OECD Economies. Review of Economic Studies, 59, 663–88.

Alesina, A.Londregen, J., and H, Rosenthal. (1993). A model of the political economy of the United States. American Political Science Review, 87, 12–33.

Alesina, A. and H, Rosenthal. (1995). Partisan Politics, Divided Government and the Economy, Cambridge:Cambridge University Press.

Alesina, A. and Summers, L. (1993). Central Bank Independence and Macroeconomic Performance:Some Comparative Evidence.Journal of Money, Credit and Banking, 25(2), 151–162.

Allen, S. D.,and McCrickard, D. L. (1991). The influence of elections on federal reserve behavior. Economic Letters, 37(1), 51–55.

Alesina, Alberto F., Gerald D. Cohen and Roubini, Nouriel . (1997). Political Cycles and Independent Central Banks. Political cycles and the Macroeconomy, The MIT Press, Cambridge, 211-225.

Alesina, Alberto F., Gerald D. Cohen and Roubini, Nouriel . (1999). Political Cycles and the Macroeconomy. The Economic Journal, 109(459), 821–823.

Alpanda, Sami and Honig, Adam. (2007). Political Monetary Cycles and a New de facto Ranking of Central Bank Independence, Amherst College.

Alpandaa, S. and Honig, A. (2009). The impact of central bank independence on political monetary cycles in advanced and developing nations* Amherst College, Amherst, MA 01002.

Andrikopoulos, A., Ioannis L. and Kyprianos, Prodromidis. (2004). Fiscal policy and political business cycles in the EU. European Journal of Political Economy, 20(1), 125–152.

Arby, M. Farooq. (2004). State Bank of Pakistan Evolution, Functions and Organization. Munich Personal RePEc Archive No.13614.

Batool, Irem, and Gernot, Sieg. (2009). Bread and the attrition of Power: Economic events and German election results, Public Choice, 141(1-2), 151–165.

Batool and Sieg. (2009). Pakistan, Politics and Political Business Cycles. Working paper series No.7. Economics Department, Technical University Braunschweig.

Barro and Gordon. (1983). Rules, Discretion, and Reputation in a Model of Monetary Policy. Journal of Monetary Economics, 12, 101–22.

Beck, N. (1987). Elections and the Fed: Is there a political business cycle. American Journal of Political Science, 31(1), 194–216.

Berger, Helge, and Ulrich, Woitek. (2001). The German political business cycle: Money demand rather than monetary policy. European Journal of Political Economy, 17(3), 609–631.

Berry, B., Euel E. and E. J. Harpham (1996). The yield curve as an electoral bellwether., Technological Forecasting and Social Change, 51, 281–294.

Blais, Andre. and Nadeau, Richard. (1992). The Electoral Budget Cycle. Public Choice, 74(4), 389–403.

Blomberg, S. B., and Hess, G. D. (2003). Is the political business cycle for real? Journal of Public Economics, 87(5/6), 1091–1121.

Blomberg, S. B. and Gregory D, Hess. (2004). Is the political business cycle for real? Journal of Public Economics, 87(5–6), 1091–1121.

Boschen, J. and Weise, Charles L. (2003). "What Starts Inflation: Evidence from the OECD Countries". Journal of Money, Credit and Banking, Blackwell Publishing, 35(3), 323–49.

Brender, Adi. and A, Drazen. (2005). "How Do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Cross-Section of Countries". NBER Working Papers 11862, National Bureau of Economic Research, Inc.

Brender, Adi. and Allan, Drazen. (2005). Political budget cycles in new versus established democracies. Journal of Monetary Economics, 52(7), 1271–1295.

Brender, Adi. and Allan, Drazen. (2008). How do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries. American Economic Review, 98(5), 2203–2220.

Caleiro, António. (2009). How upside down are political business cycles when there is output persistence. Research in Economics, 63(1), 22–26.

Campbell, J. E. and Wink, K. A. (1990). Trial-heat forecasts of the presidential vote. American Politics Quarterly, 18, 251–269.

Cameron, D. (1978). The expansion of the public economy. American Political Science Review, 72, 1243–1261.

Cerda, Rodrigo. and Rodrigro, Vergara.(2008). Government Subsidies and Presidential Election Outcomes: Evidence for a Developing Country. World Development, 36, 2470–2488.

Coelho, C. Veiga, F. and Linda G, Veiga. (2006). Political business cycles in local employment: Evidence from Portugal. Economics Letters, 93(1), 82–87.

Converse, Philip E. (2006). " Researching Electoral Politics". American Political Science Review, 100, 605–12.

Cukierman and Meltzer. (1986). A positive theory of discretionary policy, the cost of democratic government, and the benefits of a constitution. Economic Inquiry, 24, 367–88.

Cukierman, A. (1992). Central Bank Strategy, Credibility and Independence: Theory and Evidence, Cambridge, MA:MIT Press.

Cusack, T. R. (1999). The shaping of popular satisfaction with government and regime performance in Germany. British Journal of Political Science, 29, 641–672.

Debelle, G. and Fischer, S. (1994). How Independent Should A Central Bank Be? In J. Fuhrer, ed., Goals, Guidelines, and Constraints Facing Monetary Policymakers, Federal Reserve Bank of Boston Conference Series, No. 38, Boston: Federal Reserve Bank of Boston.

Dickey, D. A., and Fuller, W. A. (1979). Distribution of estimators for autoregressive time series with a unit root. Journal of the American Statistical Association, 74, 427–431.

Downs, A. (1957). An economic theory of democracy. New York: Harper & Row.

Drazen, A. (2000). Political economy in macroeconomics. Princeton University Press.

Eijffinger, S. and Haan, J. De. (1996). The Political Economy of Central Bank Independence, Special Papers in International Economics No.19, Princeton University.

Enders, Walter. (2004). Applied Econometric Time Series, John Wiley & Sons Inc. USA.

Erikson, R. S. (1989). Economic conditions and the presidential vote. American Political Science Review, 83(2), 567–573.

Estrella, A. and Hardouvelis, G. A. (1991). The term structure as a predictor of real economic activity. Journal of Finance, 46, 555–576.

Estrella, A. and Mishkin, F. S. (1997). The predictive power of the term structure of interest rates in Europe and the United States: Implications for the European Central Bank. European Economic Review, 41, 1375–1401.

Fair, R. C. (1978). The effect of economic events on votes for president. Review of Economics and Statistics, 60(2), 159–173.

Fair, Ray C. (1982). The Effect of Economic Events on Votes for President: 1980 Results, Review of Economics and Statistics, 64(2), 322-325.

Fair, R. C. (1996). Econometrics and presidential elections. Journal of Economic Perspectives, 10, 89–102.

Fama, E. F. (1990). Stock returns, expected returns, and real activity. Journal of Finance, 45, 1089–1108.

Faust, J.and Irons, J. (1999). Money, politics and the post-war business cycle. Journal of Monetary Economics, 43, 61–89.

Feld, L. P. and Kirchgaessner, G. (2000). Official and hidden unemployment and the popularity of the government: An econometric analysis for the Kohl government. Electoral Studies, 19, 333–347.

Ferris, J. Stephen. (2008). Electoral politics and monetary policy: does the Bank of Canada contribute to a political business cycle? Public Choice, 135, 449-468.

Fratianni, M., J.von Hagen, and C. Waller. (1997). Central Banking as a Principle Agent Problem, Economic Enquiry, 35, 378–93.

Frey, B. S. and Garbers, H. (1972). Der Einfluss wirtschaftlicher Variabler auf die Popularität der Regierung – eine empirische Analyse. Jahrbuch für National ökonomie und Statistik, 186, 281–295.

Frey, B. S. and Schneider, F. (1979). An econometric model with an endogenous government sector. Public Choice, 34, 29–43.

Gärtner, Manfred. (2000). Political Macroeconomics: A Survey of Recent Developments. Journal of Economic Surveys, 14(5), 527–561.

Geys, Benny and Vermeir, Jan. (2008). The political cost of taxation: New evidence from German popularity ratings. Electoral Studies, 27, 663–648.

Ginsburgh, V. and Michel, P. (1983). Random Timing of Elections and the Political Business Cycle. Public Choice, 40(2), 155–164.

Gleisner, R. F. (1992). Economic developments of presidential election: The Fair model. Political Behavior, 14, 383–394.

Golden, D. G. and Poterba, J. M. (1980). The Price of Popularity: The Political Business Cycle Re-examined. American Journal of Political Science, 24, 696–714.

Grier, Kevin B. (1987). Presidential Elections and Federal Reserve Policy: An Empirical Test. Southern Economic Journal, 54(2), 475–486.

Grier, Kevin B. (1989). On the Existence of a Political Monetary Cycle. American Journal of Political Science, 33(2), 376–389.

Grier, Kevin B. (2008). US presidential elections and real GDP growth, 1961–2004. Public Choice, 135(3-4), 337–352.

Grilli, V., Masciandaro, D. and Tabellini, G. (1991). Political and Monetary Institutions and Public Financial Policies in the Industrial Countries. Economic Policy, 13, 341–92.

Hadri, Kaddour and John, Maloney.(1998). Does Central Bank Independence Smooth the Political Business Cycle in Inflation? Some OECD Evidence.The Manchester School, 66(4), 377–395.

Havrilesky, Thomas M. (1993). The Pressures on American Monetary Policy. Norwell, MA: Kluwer Academic Publishers.

Haynes, S. E. and Stone, A. J. (1994). Why did economic models falsely predict a Bush landslide in 1992?. Contemporary Economic Policy, 12, 123–130.

Haynes, S. E., and Stone, J. A. (1988). Does the political business cycle dominate United States unemployment and inflation? In T. Willett, ed., Political business cycles: The economics and politics of stagflation. San Francisco: Pacific Institute.

Heckelman and Wood. (2005). Political Monetary Cycles under Alternative institutions: The independent Treasury and the federal Reserve. Economics and Politics, 17(3), 331–350, 0954–1985.

Hibbs, Douglas. (1977). Political Parties and Macroeconomic Policies. American Political Science Review, 71, 1467–87.

Hibbs, D. A. (1982). President Reagan's mandate from the 1980 elections: A shift to the right?. American Politics Quarterly, 10, 387–420.

Hibbs, Douglas A. (2000). Bread and Peace voting in US presidential elections. Public Choice, 104, 149–180.

Hibbs, Douglas A. (2006). Voting and the Macroeconomy, In D. Wittman & B. Weingast (Eds.), The Oxford handbook of political economy, pp. 565–586, Oxford University Press.

Hibbs, D. A. (2008). Implications of the Bread and Peace model for the 2008 US presidential election. Public Choice, 137, 1–10.

Keech, William R. and Pak, Kyoungsan. (1989). Electoral cycles and budgetary growth in veteran's benefit programs. American Journal of Political Science, 33, 901–911.

Keil, Manfred W. (1988). Is the Political Business Cycle Really Dead?. Southern Economic Journal, 55(1), 86–99.

Key, V. O. (1968). The Responsible Electorate. New York Vintage Books.

Kiewiet, D. Roderick. (1983). Macroeconomics and Micropolitics: The electoral effects of economic issues. Chicago: University of Chicago Press.

Kirchgaessner, G. (1974).Oekonometrische Untersuchungen des Einflusses der Wirtschaftslage auf die Popularitaet der Parteien. Schweizerische Zeitschrift fuer Volkswirtschaft und Statistik, 110, 409–445.

Kirchgaessner, G. (1985). Rationality, causality and the relation between economic conditions and the popularity of parties. An empirical investigation for the Federal Republic of Germany, 1971–1982. European Economic Review, 28, 243–268.

Kramer, G. H. (1971). Short-term fluctuations in U.S. voting behavior, 1896–1964. American Political Science Review, 65, 131–143.

Krause, George A. (2005). Electoral Incentives, Political Business Cycles and Macroeconomic Performance: Empirical Evidence from Post-War US Personal Income Growth. British Journal of Political Science, 35(1), 77–101.

Kydland, F., and E. Prescott. (1977). Rules Rather than Discretion: The Inconsistency of Optimal Plans. Journal of Political Economy, 85, 473–90.

Laney, L. O., and Willett, T. D. (1983). Presidential politics, budget deficits, and monetary policy in the United States: 19601976. Public Choice, 40, 5369.

Leertouwer, E. and Maier, P. (2002). International and Domestic Constraints on Political Business Cycles in OECD Economies: A Comment. International Organization, 56(1), 209–221.

Lewis-Beck, M. S. (1988). Economics and elections: The major western democracies. Ann Arbor: University of Michigan Press.

Lewis-Beck, M. S. and Paldam, M. (2000). Economic voting: an introduction. Electoral Studies, 19, 113–121.

Lewis-Beck, M. S. and Stegmaier, M. (2007). Economic Models of Voting. In R. J. Dalton, & H. D. Klingemann (eds.), The Oxford Handbook of Political Behavior. London: Oxford University Press, 518–537.

Lewis-Beck, Jcoby, Norpoth and Eeisberg. (2007). The American Voter Revisited. The University of Michigan Press.

Lindbeck, Assar. (1976). Stabilization Policy in Open Economics with Endogenous Polititions. American Economic Review, 66, 1–19.

Lohmann, Susanne. (2008). The Non-Politics of Monetary Policy.The Oxford Handbook of Political Behavior. London: Oxford University Press, 523–544.

MacRae, C. Duncan. (1977). A Political Model of the Business Cycle. Journal of Political Economy, 85(2), 239–263.

Maloney, J. Pickering, A. and K. Hadri. (2003). Political Business Cycles and Central bank independence. The Economic Journal, 113(486), C167–C181.

McCallum, Bennett T. (1978). The Political Business Cycle: An Empirical Test. Southern Economic Journal, 44(3), 504–513.

Merriam, Charles E., and Gosnell, Harold, E. (1924). Non-Voting. Chicago:University of Chicago Press.

Müeller, D. C. (2003). Public Choice III. Cambridge: Cambridge University Press.

Nannestad, P. and Paldam, M. (1994). The VP-function: A survey of the literature on vote and popularity functions after 25 years. Public Choice, 79, 213–245.

Nordhaus, William D. (1975). The Political Business Cycle. Review of Economic Studies, 42(2), 169–190.

Nordhaus, William D. (1989). Alternative Approaches to the Political Business Cycle. Brookings Papers on Economic Activity, 2, 1–68.

Pack J.r. (1987). The political policy cycle: Presidential effort vs. presidential control. Public Choice, 54, 231–259.

Paldam, Martin. (1997). Political Business Cycles. In Mueller D. C. 1997, ed., Perspectives on Public Choice, Cambridge: A Handbook Cambridge University Press, 342–379.

Pelzman, S. (1992). Voters as fiscal conservatives. Quarterly Journal of Economics, 107, 327–361.

Persson, T. and G. Tabellini. (1990). Macroeconomic Policy, Credibility and Politics. Chur, Switzerland: Harwood Academic Publishers.

Persson, Torsten, and Guido Tabellini. (2003). The Economic Effects of Constitutions. Munich Lectures in Economics, MIT Press: Cambridge.

Ramsey, J. B. (1969). Tests for Specification Errors in Classical Linear Least Squares Regression Analysis. Journal of the Royal Statistical Society: Series B, 31, 350–371.

Rodrik, D. (1999). Why do open economies have bigger governments? Journal of Political Economy, 106, 997–1032.

Rogoff, K. and A. Sibert. (1988). Elections and Macroeconomic Policy Cycles. Review of Economic Studies, 55, 1–16.

Rogoff, Kenneth. (1990). Equilibrium Political Budget Cycles. American Economic Review, 80, 21–36.

Saporiti, Alejandro. and Streb, Jorge. (2008). Separation of powers and political budget cycles. Public Choice, 137, 329–345.

The State Bank of Pakistan ACT, 1956. (http://www.sbp.org.pk/)

Schuknecht, Ludger. (1996). Political Business Cycles and Fiscal Policies in Developing Countries. Kyklos, 49(2), 155–70.

Schwert, G. W. (1990). Stock returns and real economic activity: A century of evidence, Journal of Finance, 45, 1237–1257.

Sieg, Gernot. (1997). A model of partisan central banks and opportunistic political business cycles. European Journal of Political Economy, 13(3), 503–516.

Sieg, Gernot. (2006). A model of an opportunistic-partisan political business cycle. Scottish Journal of Political Economy, 53(2), 242–252.

Stigler, George J. (1973). General Economic Conditions and National Elections. The American Economic Review (AER), 63(2), 160 – 67.

Stigler, G. (1973). General economic conditions and national elections. American Economic Review: Papers and Proceedings, 63, 160–67.

Suzuki, Motoshi. (1992). Evolutionary Voter Sophistication and Political Business Cycles. Public Choice, 81(3-4), 241–261.

Tufte, Edward R. (1978). Political Control of the Economy. Princeton: Princeton University Press.

Waller, C. (1989). Monetary policy Games and Central Bank Politics. Journal of Money, Credit and Banking, 21, 422–31.

Weingast, Barry R. and Donald A, Wittman.(2008). The Oxford Handbook of Political Economy, Oxford University Press.

Williams, John T. (1990). The Political Manipulation of Macroeconomic Policy. The American Political Science Review, 84(3), 767–795.

Williams, John T. (1990). The Political Manipulation of Macroeconomic Policy. The American Political Science Review, 84(3), 767–795.

Woolley, John T. (1994). The Politics of Monetary Policy: A Critical Review. Journal of Public Policy, 14(1), 57–86.